BANK OF AMERICA

Driving Responsible Growth— now and going forward

Annual Report 2021

CONTENTS

A letter from Chair and CEO Brian Moynihan

To our shareholders,

To our clients,

To my teammates,

To leaders and partners in the communities we serve,

It is my pleasure to share with you the 2021 Bank of America Annual Report.

The following pages detail how, over the past year, your company once again fulfilled our purpose to make financial lives better — and did so in a way that benefitted clients, teammates, shareholders and society alike. Against a backdrop of the global pandemic and its ongoing challenges, we delivered Responsible Growth.

With that in mind, I begin this report by thanking my 208,000 teammates around the world whose efforts and dedication made this all possible. While thanking my teammates overall, I particularly join them in thanking three senior colleagues who were instrumental in our success over the last several years and retired at the end of 2021 — Anne Finucane, Tom Montag and Andrea Smith. These leaders delivered for our employees and our shareholders and were truly great colleagues. One of the testaments to their leadership was their work to develop strong talent to succeed them and continue the company's mission. ***You can see on page 13 our current management team reflecting their development efforts.***

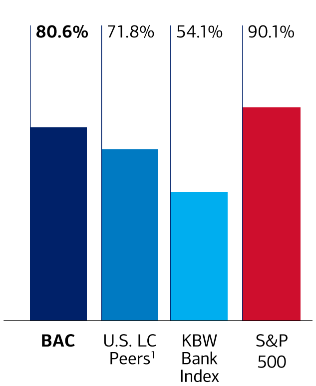
I would also like to thank our Board of Directors, and our Lead Independent Director, Lionel Nowell III, for their leadership. We also recognize and give our appreciation to Tom May and Sue Bies, two directors who are retiring and will not stand for reelection at our annual shareholders' meeting. Tom came to a predecessor company's board in 1994. He became a board member of Bank of America in 2004 and led our Audit and Corporate Governance, ESG and Sustainability Committees as chair. Sue became a board member in 2009 at the height of the financial crisis. Both of these colleagues have provided tremendous wisdom to all of us. ***Lionel offers his perspective on our company's performance in 2021, and his outlook for the future, on page 10.***

By virtually any measure, 2021 was a successful year for our company and you, our shareholders.

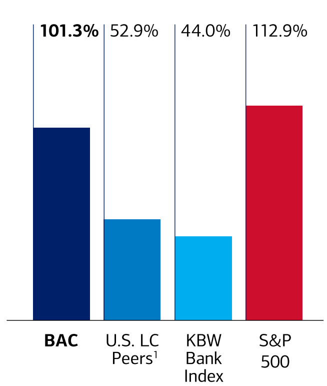
We earned a record $32.0 billion, or $3.57 per diluted share, on $89.1 billion in revenue. We increased total assets to $3.2 trillion as we grew deposits to more than $2 trillion. Asset quality remained strong with net charge-offs of customer loans nearing a 50-year low. We maintained high levels of capital and liquidity.

For the year, our stock price increased 47%, outpacing the S&P 500 and the broader bank index. Whether you are a new shareholder or someone who has held the stock for many years, our stock has performed well. At year-end 2021, our 3-, 5-, and 10-year stock price improvement all outperformed the broader bank index, and our 10-year performance was over 700%.

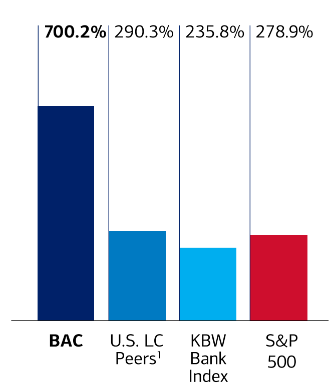
3-year stock performance



5-year stock performance



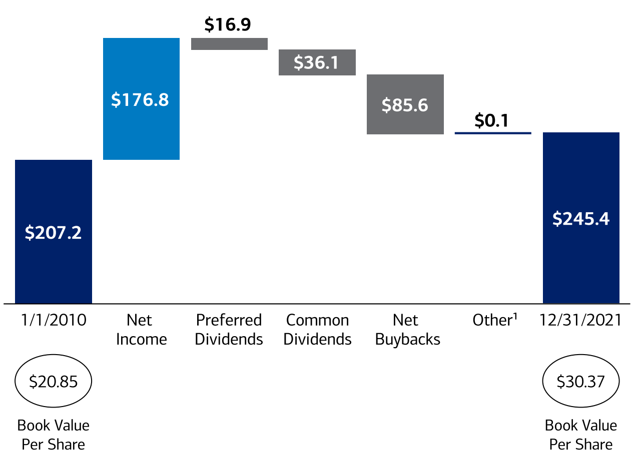
10-year stock performance



[1] U.S. Large Cap (LC) Peers include JPM, C, WFC, GS and MS.

We also increased our quarterly stock dividend by 17%. Including share repurchases, we returned nearly $32 billion in capital back to shareholders in 2021. In thinking about the work your team has done, I thought the following chart would give some perspective. Starting with our beginning base of common equity at January 1, 2010, you will note across the 12 years, we have earned $177 billion of net income, paid out $53 billion in common and preferred dividends, and had net buybacks of $86 billion, for a total return of capital of $139 billion. So while providing all the support for clients and communities and producing these shareholder returns, our $245 billion of common equity is still 18% stronger than the 2010 starting point. The reduction in shares outstanding is also noteworthy, moving from 9.9 billion in 2010 to less than 8.1 billion as we ended 2021. So a shareholder who kept his or her shares from 2010 until now owns about 18% more of the company. And, over the same time period, our book value per share is 46% higher.

Changes in Common Shareholders' Equity Since 2010
(billions)



Note: 1/1/10 common equity includes the adoption of FAS 166/167 and the Common Equivalent Securities which were converted to common stock on 2/24/10.

[1] Includes impact of changes in Accumulated Other Comprehensive Income and cumulative adjustments for accounting changes.

Amounts may not total due to rounding.

Even with all that capital return, we still have an extremely strong capital position, witnessed by our common equity tier 1 (CET1) ratio of 10.6%, well above our minimum requirements.

As we think about our core operations in 2021, we returned to delivering the organic growth experienced prior to the pandemic. Across our eight lines of business, we once again deepened relationships with existing clients and earned the trust of new ones. We deployed our capabilities, expertise and balance sheet to help our clients achieve their financial goals. We focused on the needs of our clients — one client at a time — and held client experience scores at near-record highs.

While supporting clients, we also invested to support our teammates around the globe, as part of our commitment to being a great place to work. We expanded benefits and resources to promote health, wellness and safety for our teammates and their families. See more in the "Making our company a great place to work" section of this letter.

We also delivered for communities to help them thrive. We will discuss the many ways we did this throughout this report, and we provide an update on the Stakeholder Capitalism Metrics that we first reported upon in last year's report. Examples of outcomes we have delivered include: helping business clients prepare for and transition toward a low-carbon future, promoting greater racial equality and economic opportunity wherever we operate, and tripling our affordable homeownership commitment to help more low- to moderate-income clients build generational wealth through the purchase of a home.

All of this — and so much more — helped us achieve the best year of earnings in company history. And we did it all by delivering Responsible Growth.

Responsible Growth

Responsible Growth is how we drive our company.

It has four straightforward tenets:

- We must grow and win in the market, no excuses.
- We must grow with a customer focus.
- We must grow within our risk framework.
- We must grow in a sustainable manner.

And, to grow in a sustainable manner, we must drive operational excellence, make our company a great place to work, and share our success with communities.

In 2021, our company executed well on each of these tenets.

Here's how we did it.

Grow and win in the market, no excuses

The acid test of our success is market share growth achieved by both adding new clients and doing more with the clients we have. In the years leading up to the pandemic, our company had been delivering strong organic growth driven by the power of our franchise and our brand, our best-in-class relationship teams, our great products and our industry-leading digital capabilities.

When the worldwide health crisis hit in 2020, we deployed our resources and capabilities to meet the rapidly-evolving financial needs of our clients, in addition to providing support for our teammates and communities. As the economy rebounded from the 2020 lows, we've seen client activity normalize and accelerate. In 2021, we saw our organic growth engine kick back in.

We grew deposits by $269 billion to a record $2.1 trillion. We grew loans by $51 billion in the most recent quarter, the fastest rate in our history — with the exception of the rapid drawdowns on commercial lines of credit we experienced early in the pandemic.

For retail clients, which includes our Consumer as well as Wealth Management clients, deposits grew to $1.4 trillion

and we retained our spot as the top bank in the country by retail deposits. Importantly, we added nearly 1 million net new checking accounts, which are predominantly core transaction accounts for our clients. At the same time, we added more than half a million new Consumer Investment accounts as a growing number of clients chose to invest and manage their funds through Merrill Edge, our well-established digital investment platform. This helped Consumer Investment assets grow 20% over the course of 2021. And we added millions of new credit card accounts.

We strengthened our leadership positions in both our *high-tech* and *high-touch* channels. We saw record engagement across our digital channels, which I will discuss later in this letter. And while digital customer behavior increased, we also recognize the continued need for a strong physical delivery network supporting all our businesses.

We continued our geographical financial center expansion work in 2021, bringing our brand to new cities while also optimizing our presence in existing markets. In 2021, we refreshed nearly 400 financial centers and opened 82 financial centers, 41 of which were in our expansion markets, including Denver, Minneapolis, Indianapolis, Pittsburgh as well as locations in Ohio and Kentucky. We continued to gain retail deposit market share in key markets. In 25 of the top 30 markets across America, we remain ranked the #1, #2, or #3 bank. In 16 of those markets — more than three times the number of our closest peer — we are the #1 bank.

We are focused on growth with efficiency, i.e., adding branches and gaining scale in markets effectively rather than spreading them around. For example, in Minneapolis we have approximately $3 billion in deposits from our Retail business and are the #7 position in the market. We did not have a retail presence in Minneapolis prior to 2015. And average deposit size in branches is $217 million, already 1.4 times the average in the industry. This shows the strength of our brand.

During the year, we also continued to enhance our flagship loyalty program, Preferred Rewards, which recognizes and rewards clients for doing business with us across all products. Preferred Rewards memberships grew to 9.4 million, an 11% year-over-year increase, and we once again saw 99% retention rates from our members.

We also delivered products and personalized care to help our 11 million business owner clients achieve their financial goals. We continue to be among the nation's largest Small Business lenders, ending 2021 with $22 billion in total outstanding loans. Small Business clients benefitted from our award-winning digital tools and the advice of Business Advantage specialists in 2,400 financial centers.

At the same time, we continued to innovate and enhance the products and services we offer to merchants, driving new clients and additional volume through our Merchant Services platform.

In our wealth management business — Merrill and The Private Bank — we saw record client flows during 2021 of $149 billion. Total client assets ended the year at $3.8 trillion, up 15% from 2020. Profit margins in the business lead the industry. Importantly, we continued to drive holistic client relationships as deposits in our Global Wealth & Investment Management (GWIM) business grew to $390 billion, up more than 20%. Standalone, our GWIM business would be a top 10 U.S. bank by deposits. Average loans also grew during 2021 to nearly $200 billion, having grown now for 47 straight quarters, even throughout the pandemic.

For commercial and corporate clients, we raised $963 billion in capital in 2021 to help them build new manufacturing facilities, hire workers, and evolve their business models to meet future opportunities — including their transition to more sustainable operations. So as one considers the capital repurchases shown in the earlier chart, one might ask, "Should we have used the capital we used for buybacks to help our clients?" The answer is: we did that, too. During the same 12-year period in which we returned $139 billion of capital to shareholders, we also provided $8.6 trillion in capital raising for our corporate clients.

Commercial loan balances grew 9% to $543 billion during 2021. We helped companies manage their cash and saw our Global Transaction Services revenue grow to more than $7.2 billion. And our Investment Banking team had three of its best quarters in the company's history in 2021, leading to a record $8.9 billion in investment banking fees.

In our Global Markets business, our teams also had a very strong year amid continued market volatility. Our sales and trading revenue of more than $15 billion was the best in a decade. We continue to invest in this business, most notably by deploying more than $150 billion in additional balance sheet to support client growth.

In 2021, each of our businesses contributed to our record results and we grew and won in the market.

Grow with a customer focus

The second tenet of Responsible Growth is to grow with a customer focus. Our growth has to be organic: For nearly 30 years, a bank with 10% or more of the deposits in the U.S. has not been permitted to acquire a U.S. deposit-taking institution. Our growth comes from focusing upon and fulfilling client needs. We focus on what they need and the service and relationship quality we must bring to

$2.1T

We grew deposits to a record $2.1T in 2021.

them to meet their needs. We also focus on all the ways to serve — *high-tech* and *high-touch* — it is our advantage to have massively-scaled platforms in each area.

In 2021, we saw record client engagement across our *high-tech* digital platforms. Our continued growth in digital enrollment and engagement has been instrumental to our success in deepening client relationships while reducing costs and driving greater efficiencies across our businesses.

In Consumer, we added 2 million active digital banking users during 2021, the fastest annual numerical growth in digital users in our company's history. As of the end of the year, we had 54 million verified users with 41 million active, i.e., engaged in the past 90 days. Those users logged into their accounts 10.5 *billion* times during 2021. In addition to helping clients manage their accounts, digital has been a key driver of our sales. For example, in the fourth quarter of 2021, 86% of all deposit transactions were digital. At the same time, 46% of all consumer sales came through digital channels, up from 32% pre-pandemic. During the past five years, all product sales have been fully digitally enabled to allow this growth to happen. You can open a checking account, get a mortgage, get a home equity loan, a credit card or invest, all through a fully digital process.

We also see more and more clients turning to Erica®, our artificial intelligence (AI)-based virtual financial assistant, for help keeping up with managing their finances. In 2021, total Erica interactions from our clients increased threefold to 427 million. We continued to expand Erica's capabilities to make it easier for clients to manage their financial lives. Erica has proven to be a critical channel in helping us deliver important information to clients and addressing their questions and concerns in real-time.

So what is Erica? Natural language processing, AI, data aggregation and analysis sitting on a massive infrastructure to deliver in real-time the "answer" to any question. But it is useful beyond clients as it can help our teammates work better.

Erica is also a part of our operational platform, delivering efficiencies and reducing manual intervention to help our client-facing teammates. For example, our Erica-driven BankerAssist internal platform is saving our Global Banking teams 40,000 hours of work each year, and reducing their client response times by two-thirds.

$35B+

In the past 12 years, we've **invested more than $35B to build a powerful, more secure and scalable technology platform**.

The power of our digital tools is also changing the way clients send and receive money. During 2021, the number of clients who are active Zelle® users — both consumers and small businesses — increased 23% to 15.8 million. These users sent and received $231 billion in payments over the course of the year, a 64% increase over 2020. To put our Zelle volumes into perspective, the 779 million Zelle transactions made by our clients during the year surpassed the number of paper check transactions written by our clients for the first time. So why is that important? The check numbers have dropped more than 25% over the past two years. Not processing paper checks saves us money to invest in other activities. It is one of the ways we have been working to reduce the $5 billion level of cash/check and related expense we cited in 2017. It continues to fall. The costs get reinvested in more productive activities.

Our digital capabilities have also been a powerful driver of client engagement and satisfaction within our wealth management businesses. Our Merrill clients are 79% digitally active while our Private Bank clients are 85% digitally active. And, we continue to make steady progress with clients accepting paperless statements across the franchise. As face-to-face meetings returned in part from their 2020 hiatus, our advisors continued to leverage the strength of our digital platforms to connect with, and address the individual needs of, our clients. In the fourth quarter of 2021 alone, our Merrill Lynch advisors sent 1.5 million secure messages to our clients, and our clients signed 230,000 forms digitally — 47% of all eligible transactions. This is all simply easier for our clients.

Our commercial clients, too, are using our digital capabilities to manage their company's finances from wherever they are — and they're doing it in record numbers. In 2021, we saw a 55% increase in active users of our CashPro app. With a simple tap on their phone (or even their watch), those users — CFOs and finance leaders from companies around the world — approved $384 billion in payments during 2021, a 119% increase in approval volumes over the previous year.

We continue to deliver new capabilities to help support finance operations for our commercial clients. In January 2022, we launched CashPro Forecasting, a tool that uses AI and machine learning technology to more accurately and efficiently predict clients' future cash positions.

The digital strength and success we demonstrated in 2021 — including the many industry awards and recognition we received — did not happen overnight. It is the product of years of investment and innovation. In the 12 years cited above, we have invested more than $35 billion in new technology initiatives, including code development and related initiatives, to build a powerful, more secure and scalable technology platform with market-leading capabilities. This platform has helped us deliver a best-in-class digital experience for our clients, and efficient operating platform for our teammates. It is also a key driver in cost reduction for our company.

Innovation remains a top priority for our company. In 2022, we plan to continue by investing another $3.5 billion in initiatives to enhance our platform, fund next-gen projects, and extend our digital leadership into the future.

As important as our digital capabilities are, we also continue to focus on delivering expert support and guidance across our *high-touch* network. And, in 2021, we served our clients well through our nationwide network of 4,200 financial centers and 16,000 ATMs as well as on the phone, in our offices and through our chat capabilities. As I mentioned before, our client experience scores during the year held near-record highs.

I'd like to add a special thanks to my teammates working in financial centers — our essential workers — who have continued to serve our clients' everyday financial needs and, in so doing, support the economic wellness of our communities every day in this pandemic.

Another way we grow with a client focus is by delivering an award-winning suite of products and services tailored to our clients' unique financial needs. And, over the past year, we have continued to enhance our product portfolio to support our retail clients.

Our no overdraft account (SafeBalance™ Banking) now has over 3 million clients. We continue to develop capabilities to help our clients manage their money more easily. We provide best-in-class financial wellness learning through Better Money Habits®. We have delivered an alternative to pay-day lending through our Balance Assist™ loan product.

Our Life Plan® capability is another key part of how we are helping clients manage their financial lives. Life Plan helps clients identify their individual financial goals, and allows us to deliver personalized insight — through our mobile app and expert advice from our specialists — to help them achieve those goals. We launched Life Plan in September 2020 and,

by the end of 2021, more than 6.3 million clients have used it to set goals and track their progress. It remains one of the fastest product rollouts in our company's history, and is helping us build and support long-term relationships with millions of clients.

To help guide our efforts to meet our consumer clients' and communities' needs, we founded our National Community Advisory Council (NCAC) 16 years ago. During 2021, the NCAC continued to provide an important external perspective to help us understand, design and deliver products to help meet the needs of our communities — particularly low- to moderate-income communities. ***We talk more about the role of the NCAC on page 33.***

Grow within our risk framework

A decade-plus of managing risk through a well-understood framework positioned us to be a source of strength for our clients, teammates and communities when the health crisis hit in 2020. Against the backdrop of an unprecedented economic decline during the pandemic, we built up significant reserves for potential credit losses. In 2021, as the economy recovered, we released $6.8 billion of those reserves as our credit losses hit historic lows. Importantly, while reserves were built in 2020 and reduced in 2021 due to accounting rules, the credit risk in our company continues to be managed extremely well. You can see in the chart below a 12-year view of net charge-offs — the losses we actually take. They reached a 50-year low during 2021.

Effective risk management means we take the right risk, through the right processes and controls, to grow our business while also protecting our balance sheet. It is key to driving the type of record loan growth we saw in 2021 and positioning ourselves for long-term success.

The right risk is also key to delivering strong results in the markets. In 2021, our Global Markets teams navigated volatile markets to deliver strong sales and trading results, with only nine days of trading losses throughout the entire year. And we supported the needs of our institutional clients through dynamic market environments.

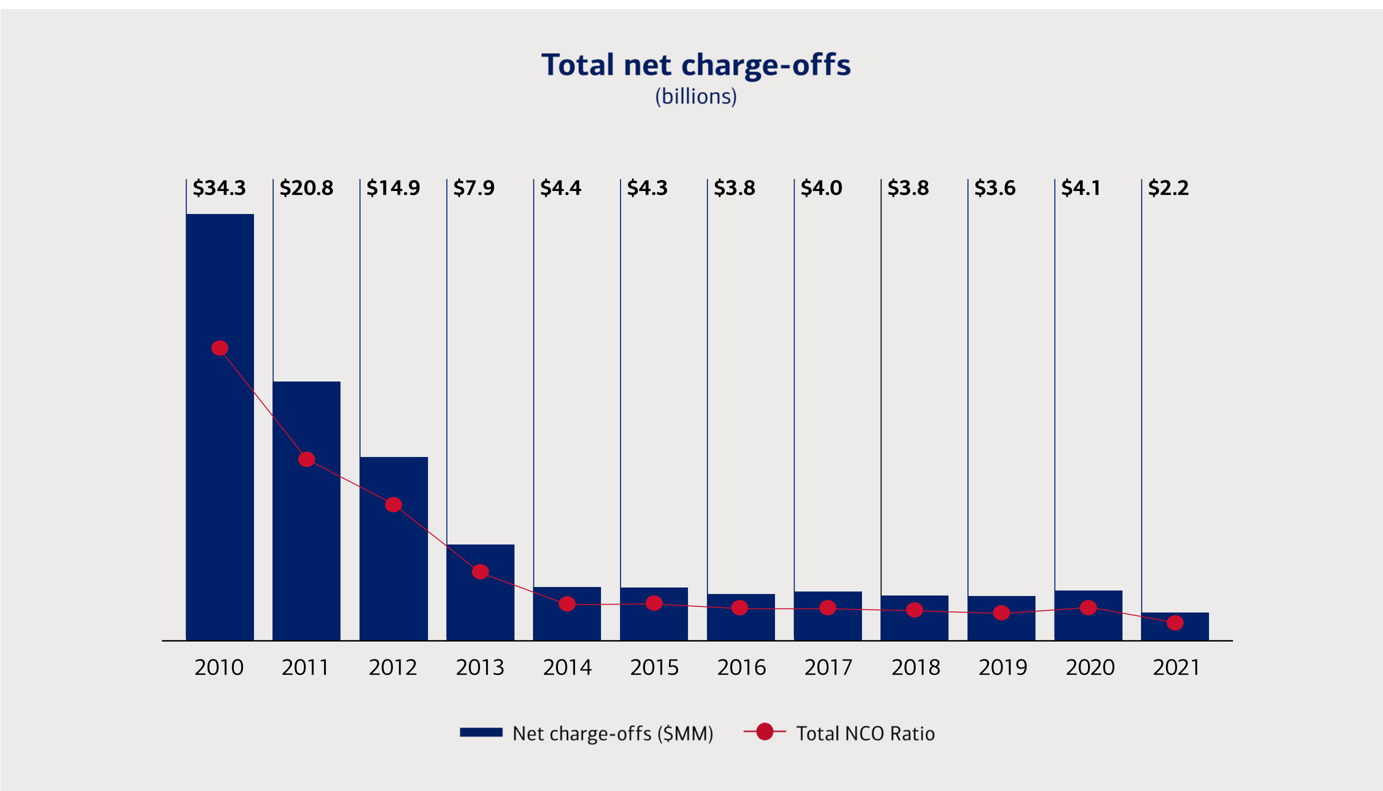
Recognizing and managing risk is integral to how my teammates drive Responsible Growth every day. That applies to the 8,000-plus teammates in our Risk, Compliance and Audit functions as well as all of my teammates worldwide. It is core to who we are. We continue to promote a culture of risk management at every level of the company, and mitigate operational risk through our focus on operational excellence.

Grow in a sustainable manner

To drive Responsible Growth, our growth must be sustainable. That means three things. First, we drive operational excellence so we can reinvest the savings produced in our capabilities, our teammates and our communities. Second, we do all we can to be a great place to work for our teammates so we can attract and retain the best talent to serve our clients. Third, we share our success so we can support the communities in which we work and live.

Driving operational excellence

Operational excellence is how we create the means to reduce costs across our platform and reinvest savings into the things that are important to us: our team, our capabilities, our client experience, our communities and our shareholders.



By pursuing operational excellence, we drive continuous improvement, reduce risk, and identify faster, simpler and more efficient ways of working and serving our clients. Our focus on operational excellence has helped us maintain expense discipline and reduce unnecessary jobs as the number of clients we serve each day — and therefore the amount and type of work our team does — has grown significantly. For perspective, the chart below shows how the team has effectively managed this across time. Assets have grown $939 billion, while our headcount was reduced 26% and expense is 16% lower,[1] even after absorbing inflation and cost-of-living type increases.

Over the same period, we have invested billions in technology initiatives, added new sales teammates, opened more than 400 new financial centers and renovated almost 2,400 more. And for 2020–2021, we've added more than $1 billion net each year in COVID-related expenses to support the health and safety of our teammates and ensure our company can continue to deliver for our clients and communities.

Despite continued high levels of investment, we grew revenue faster than expenses in the second half of 2021 and saw the return to the positive operating leverage we experienced prior to the pandemic — when we achieved that for 18 straight quarters. As we look to 2022 and beyond — amid a strengthening economy and expected rising interest rates — we expect that our success driving operational excellence will continue to provide powerful leverage and help us deliver for all those we serve while continuing our investment in the future of the franchise.

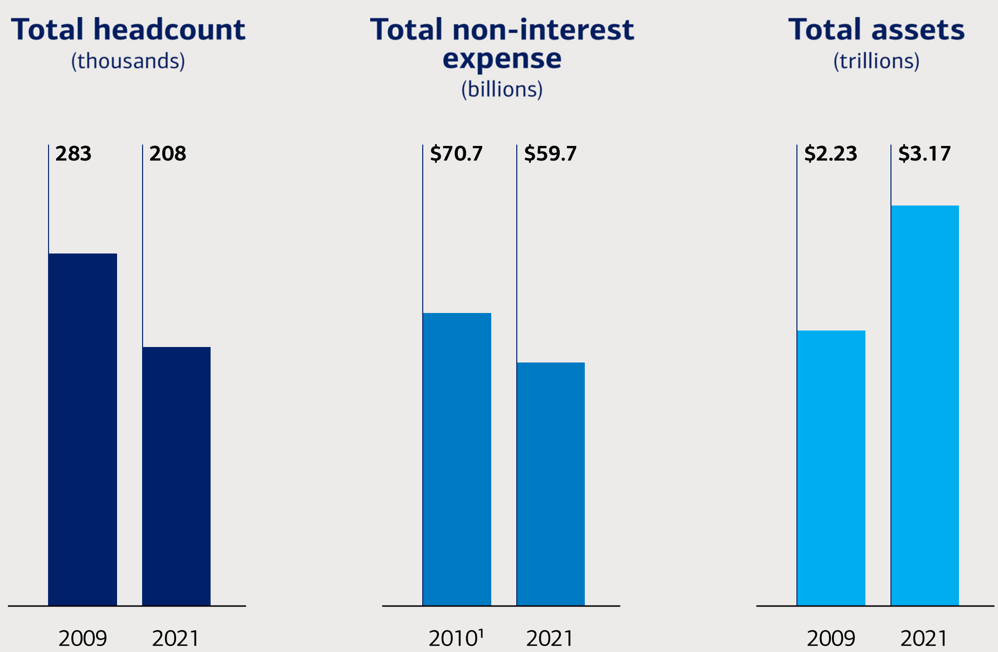
Making our company a great place to work

Attracting and retaining top talent is a critical part of how we deliver for our clients and our communities. That is particularly true in the current tight labor market. In 2021, we continued to invest to make our company a great place to work for all teammates. ***You can read more about how we are investing in teammates in our Human Capital Management update on pages 38–51.***

Amid the ongoing pandemic, these investments included expanded benefits and resources to support the health and safety of our teammates and their families. We offered free coronavirus testing, paid time-off for teammates to receive vaccinations and boosters, and vaccination clinics in our offices around the world, just to name a few.

Another way we make our company a great place to work is by fostering a diverse and inclusive (D&I) workplace. We want our workforce to reflect the communities we serve across all dimensions. And in 2021, we made important progress toward that goal.

The policies we put in place around our D&I efforts help promote transparency, accountability and continued progress. We embed diverse representation into manager scorecards. We use third-parties to validate equal pay for equal work. And, importantly, we ask our teammates every year to tell us how we are doing. In the 2021 employee survey, our employee engagement and D&I index scores were near-record highs.



[1] 2010 total non-interest expense excludes $12.4 billion goodwill impairment. Based on reported expense of $83.1 billion, expense is 28% lower.

Recognizing and rewarding performance is another priority for us. We want teammates who are invested in our company and our clients, and we dedicate our time and resources to help them build long careers with us. That begins with providing a competitive starting wage and benefits. In 2021, we raised our U.S. minimum hourly wage to $21, on the path to our commitment of $25 by 2025. This means that any employee that starts work for our company makes at least $43,000 per year with some of the most comprehensive full-time benefits available.

As I highlighted earlier, we also delivered special compensation awards to teammates for our performance in 2021, the fifth year we have done so. For 2021, we increased the value of the award to $1 billion, totaling nearly $3.3 billion in special compensation awards since 2017. Roughly 97% of our teammates received an award this year, with the vast majority receiving it in the form of Bank of America stock to help them share in our long-term success. This is over and above *all* other forms of compensation.

We also continue to invest in our teammates through a progressive compensation model. Each year, teammates with lower salaries, on average, receive higher compensation increases as a percentage of salary when compared to employees with higher salaries. All teammates have been rewarded across time. The chart to the right shows the average annual wage increases for a teammate from 2010 through today.

Increase in annual compensation by compensation cohort for an employee from 2010 until today

Cohort	Average annual increase
<$50K	**8%**
$50K to $100K	**6%**
$100K to $200K	**5%**
$200K+	**4%**

We continue to provide higher company subsidies for medical premiums for teammates with lower salaries. In 2022, for the tenth consecutive year, there was no increase in medical premiums for teammates earning less than $50,000 per year. For all other teammates, the average increase in medical premiums has been less than trend growth in medical cost in the marketplace.

So what is the payback for all this? As you can see on page 49, our turnover rate in 2021 — the so called “great resignation year” — was 12%, comparable to 2019, and 20% below where we started in 2012. That difference is very beneficial to our shareholders and our clients.

In the 2021 employee survey, our Employee Engagement and Diversity & Inclusion Index scores were near-record highs.

Sharing our success

For Responsible Growth to be sustainable, we must also share our success with our communities.

Importantly, at Bank of America, the work we do to deliver for our communities and for society is embedded in all of our operations and integral to how we run our company. We call it Responsible Growth.

We align all of our activities to drive progress. That means we bring our $3.2 trillion balance sheet, our $60 billion in annual spending, the trillions of dollars in capital we raise each year for our clients, and the volunteer efforts of 208,000 associates to the task — in addition to our philanthropic initiatives.

For example, we recognize the value to our business — and to society — of diversity in our supply chain. We expect all our vendors to promote and report on diversity in their own workplaces. We also require U.S. vendors to provide a minimum hourly salary of $15 per hour to employees supporting our company. And we actively seek to do business with certified diverse businesses through our Supplier Diversity Program. In 2021, approximately $2 billion of our nearly $20 billion in annual spend was with diverse suppliers.

As another example, we committed to deploy $1 trillion in financing by 2030 — part of a broader $1.5 trillion commitment aligned to achieving other environmental, social and governance (ESG) priorities — to help our clients transition to a low-carbon future. That includes financing to help small businesses adopt more sustainable business practices, and financing to help major corporations in all industries transform and decarbonize their business models. ***You can read more about our approach to Sustainable Finance on page 35.***

Your company is one of the largest underwriters of green bonds, and has helped more than 225 clients support their sustainable business needs by raising in excess of $300 billion through more than 400 ESG-themed bond offerings. We were the first U.S. bank to issue a corporate social bond aligned to the U.N. Sustainable Development Goals (SDGs), a corporate social bond to support the fight against the pandemic, and a corporate equality progress sustainability bond designed to advance racial equality, economic opportunity and environmental sustainability. ***We talk more about our ESG initiatives on pages 36–37.***

400+

ESG-themed bond offerings, including **the first corporate social bond aligned to U.N. SDGs**

$1.25B

We have committed more than $300M in equity to date as part of our **$1.25B commitment to racial equality and economic opportunity**.

One of the key ways we help drive progress within our local communities is through our market president organization. Each of our 90-plus market presidents serves as chief executive for Bank of America in that market. They lead an integrated team and help us deliver one company for clients, teammates and the broader community. ***You can read more about our market presidents on page 32.***

Our market presidents have also helped us identify more than 100 high-impact minority-focused funds across the U.S., which provide capital to Black, Hispanic-Latino, Asian, Native American, other under-represented minority and women entrepreneurs. With their guidance, we have committed more than $300 million in equity to these funds to date, as part of our $1.25 billion commitment to racial equality and economic opportunity. These ethnic cohorts have not been represented historically in the private equity business as operators of the funds or as investee companies. So this is a 'win-win': diverse fund managers enabled with our investment take those funds and invest in diverse entrepreneur-owned companies. ***For more information on how we are investing in diverse entrepreneurs, see page 34.***

In 2021 alone, we made $370 million in philanthropic investments to advance economic mobility as part of our efforts to strengthen our communities. This included more than $94 million to workforce development and education programs, $87 million to support housing and small business, and more than $81 million to meet basic needs such as hunger relief.

Our market presidents also play an important role in helping us deliver our philanthropic efforts at the local level.

In February 2022, working through our network of market presidents, we announced a donation of $10.6 million — one of the largest donations in our company's history — to food banks and hunger organizations across the country. This gift was part of a broader internal company campaign to promote health and safety for our teammates and raise awareness about the importance of COVID-19 boosters. For every teammate who told us they received a booster by January 31, we donated at least $100 to a local hunger relief organization with the majority of the organizations receiving at least $25,000. I'd like to take a moment to thank the teammates who helped make this gift possible, and the organizations themselves for the important work they do within our local communities.

A message from Lead Independent Director Lionel Nowell

To my fellow shareholders:

On behalf of your company's independent directors, I want to thank you for your investment in Bank of America.

Your Board's 15 independent directors come from a diverse range of industries and backgrounds. Each director's unique perspective and expertise helps inform and guide how your company delivers long-term, sustainable value for our shareholders, and in the communities where we operate.

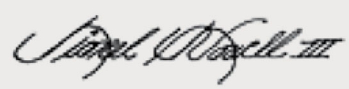
I would like to recognize the many years of service of our two retiring directors, Tom May and Sue Bies. Tom and Sue have been great colleagues, advisors and leaders on our Board. We will truly miss their wisdom and guidance.

Chaired by Brian Moynihan, your Board oversees the company's strategic direction and the execution of that strategy through regular engagement with company leadership. We then oversee the execution of that strategy through regular engagement with company leadership, including formal committee assignments. We work closely with company leaders to evaluate future opportunities and risks, and monitor how the company's direction and decisions align to the four tenets of Responsible Growth, which Brian describes in his letter.

As we reflect on 2021, we are encouraged by the company's record earnings, driven by strong organic growth, as well as the many steps the company took to support its clients, communities and employees. All of these initiatives and accomplishments position the company well for the future.

Since assuming the role as Lead Independent Director last year, I have enjoyed the frequent opportunities to meet with shareholders about the company's short and long-term performance, ESG practices, and business outlook. I value the insights I receive when speaking with shareholders and other key stakeholders, and look forward to continuing my proactive engagement in the year to come. I will maintain our regular update on company progress as your Board strives to maximize long-term shareholder value.

Thank you again for your support and investment in Bank of America.



Another way we share our success with our communities is through the individual giving and volunteering of teammates. In 2021, charitable giving by our teammates, combined with matching gifts from Bank of America, amounted to more than $72 million. At the same time, our teammates reported 1.6 million volunteer hours during the year, a reflection of their extraordinary engagement and impact within their communities.

We also use our lending and investing activities to help build strong, sustainable communities across the country. In 2021, we provided $6.6 billion in loans, tax credit equity investments, and other real estate development solutions, and deployed $4.1 billion in debt commitments and $2.5 billion in investments. Since 2005, we have financed more than 263,000 housing units, of which 86% are affordable housing.

What would you like the power to do?

Some see a choice between "shareholder capitalism" and "stakeholder capitalism"—a term defined by the World Economic Forum half a century ago and adopted by the Business Roundtable and others. But there really is not a choice to be made. Jim Collins, the great business writer, wrote about "the genius of the AND" in the 1990s to describe how the most successful companies avoid false choices in how they operate across a range of responsibilities. So, we must do both well: continue to deliver great returns for our shareholders *and* deliver for society, i.e., the communities in which we operate.

The way we serve our stakeholders begins with one straightforward question: *What would you like the power to do?*

Our clients tell us they want Bank of America to help them to live their best financial lives.

Our teammates want to build long-term, rewarding careers to help them grow and thrive and provide for their families.

Our shareholders want strong financial return on their investment in Bank of America.

Understanding the answers to that question helps us operate our company in a way that creates long-term value for all those we serve.

But what if we asked that question to broader society? What does the world want the power to do?

The answer to that question is characterized by the SDGs, which nearly 200 countries agreed to in 2015. The SDGs reflect 17 categories the global community views as essential toward building a fair and sustainable future for all, including equality of opportunity, affordable housing, prosperity, access to clean water, and renewable energy.

I'm often asked whether the private sector is the right cohort to address these priorities. We firmly believe so. But as a practical matter, it is the only way progress is going to be made. Only the private sector has the money, talent, innovation and long-term thinking needed to deliver the things that society wants: progress on the SDGs.

So we need to continue to align capitalism to produce the needed progress on the SDGs or it simply won't happen. Here's why:

Estimates suggest the SDGs will require between $5 trillion to $7 trillion per year of investment capital.

Non-profits and philanthropy certainly play an important role in delivering funding to the world, but the total assets of all non-profit foundations in the world has been estimated to be around $1.5 trillion. At the same time, the sum of all annual charitable contributions in a given year is approximately $1 trillion. Even if all of that money was directed to the SDGs — leaving aside the many other important causes non-profits are funding today — it would still leave a gap of several trillion dollars per year to fund.

The public sector, too, has an important role to play, although with budgets stretched thin — especially in the wake of the pandemic — governments alone cannot deliver what society demands. Some say you can make progress happen by regulation or taxation, but those impacts tend to be revisited, then they suffer the inevitable fate of other governmental priorities taking the prioritization or funding away.

The private sector must play the leading role, working in close collaboration with all sectors of society. We must harness the tens of trillions of dollars in available capital, the trillions of annual expense dollars and supply chain purchasing, the hiring, the net impact of company-specific net-zero greenhouse gas emissions commitments and the talent and the innovation from companies and investors around the world. We must continue to align capitalism to address society's needs *and* to deliver for shareholders. There's growing awareness on how to best do that. Your company continues to work with many organizations and leaders around the world who are helping galvanize efforts within the private sector and mobilize capital to address today's most pressing challenges.

How do we measure the progress we are making against the SDGs? In 2020, the World Economic Forum's International Business Council, which I am honored to chair, together with the Big Four global accounting firms of Deloitte, EY, KPMG, and PwC, launched a set of universal Stakeholder Capitalism Metrics aligned to the SDGs. These metrics help companies across industries measure and disclose how they are addressing societal priorities (and the SDGs) through their business activities and operations.

To date, more than 150 companies around the world have committed to reporting Stakeholder Capitalism Metrics and more than 50 of them, including Bank of America, are already including these metrics in their annual reports and other documents. We reported on them for the first time in last year's annual report.

You can find our updated Stakeholder Capitalism Metrics for this year on page 54. These metrics shed further light on how we assess and deliver long-term value for all of our stakeholders, and I invite you to review them in connection with the other information in this report.

As a financial institution, our success has always been — and will always be — dependent on the success of our clients, the strength of our communities, and the wellbeing of our employees. By focusing on Responsible Growth in 2021, we delivered for those stakeholders AND drove record profits for our shareholders. We also invested to position ourselves to do powerful things in 2022 and beyond.

That's the 'genius of the AND.'

On behalf of my teammates, our management team and the Board of Directors, I thank you for your support of Bank of America.

Brian Moynihan
March 1, 2022

Bank of America

Board of Directors

Brian T. Moynihan
Chair of the Board and
Chief Executive Officer

Sharon L. Allen

Susan S. Bies

Frank P. Bramble, Sr.

Pierre J. P. de Weck

Arnold W. Donald

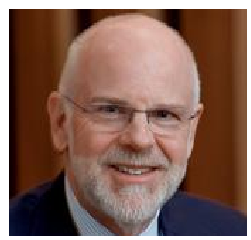
Linda P. Hudson

Monica C. Lozano

Thomas J. May

Lionel L. Nowell III

Denise L. Ramos



Clayton S. Rose

Michael D. White

Thomas D. Woods

R. David Yost

Maria T. Zuber

Our Board of Directors sets the tone at the top by overseeing our corporate strategy. In addition, the heads of our eight lines of business as well as key leadership for International and our institutional client base make up our Executive Management Team.

Bank of America

Executive Management Team

Brian T. Moynihan
Chair of the Board and
Chief Executive Officer

Raul A. Anaya
President, Business Banking

Dean C. Athanasia
President,
Regional Banking

Catherine P. Bessant
Vice Chair

Aditya Bhasin
Chief Technology and
Information Officer

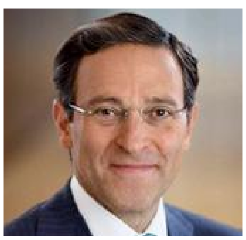
D. Steve Boland
Chief Administrative Officer

Alastair M. Borthwick
Chief Financial Officer

Sheri B. Bronstein
Chief Human Resources
Officer

James P. DeMare
President,
Global Markets

Paul M. Donofrio
Vice Chair



Geoffrey S. Greener
Chief Risk Officer

Christine P. Katziff
Chief Audit Executive

Kathleen A. Knox
President,
The Private Bank

Matthew M. Koder
President, Global Corporate
& Investment Banking

David G. Leitch
Vice Chair

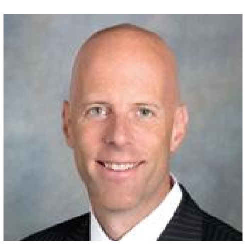
Aron D. Levine
President,
Preferred Banking

Bernard A. Mensah
President, International;
CEO, Merrill Lynch
International

Lauren Mogensen
Global General Counsel

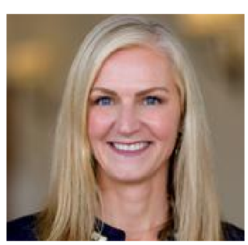
Thong M. Nguyen
Vice Chair,
Head of Global Strategy &
Enterprise Platforms

Holly O'Neill
President,
Retail Banking

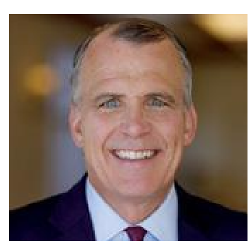


Tom M. Scrivener
Chief Operations Executive

Andrew M. Sieg
President, Merrill
Wealth Management



Wendy H. Stewart
President,
Global Commercial Banking



Bruce R. Thompson
Vice Chair,
Head of Enterprise Credit

GOING TO MARKET THROUGH OUR EIGHT LINES OF BUSINESS

By delivering capabilities through eight lines of business, we provide a unique advantage to each customer and client: the powerful expertise of one team, working together to deliver on our purpose to help make financial lives better through our focus on Responsible Growth.

CONSUMER BANKING

RETAIL BANKING

Serves mass market U.S. consumers with a full range of financial products and services through award-winning digital banking capabilities and retail banking network.

This business is led by **Holly O'Neill**.

Retail Banking is part of the Consumer Banking segment reporting to **Dean Athanasia**, head of Regional Banking.

PREFERRED BANKING

Provides advice and solutions to meet the banking, lending and investing needs of U.S. consumers with up to $250K in investable assets, and provides cash management, lending and investment solutions for entrepreneurs and small businesses with revenues of up to $5 million.

This business is led by **Aron Levine**.

Preferred Banking is part of the Consumer Banking segment reporting to **Dean Athanasia**, head of Regional Banking.

GLOBAL WEALTH & INVESTMENT MANAGEMENT

MERRILL

Serves high net worth and ultra-high net worth clients. Our personal advisor relationships ensure that we're helping each individual investor plan for and achieve their unique financial goals.

This business is led by **Andy Sieg**.

PRIVATE BANK

Provides comprehensive investment and wealth management solutions to ultra-high net worth clients with investable assets of more than $3 million.

This business is led by **Katy Knox**.

GLOBAL BANKING

BUSINESS BANKING

Client relationship teams deliver integrated financial advice and solutions — including credit, treasury, trade, foreign exchange, equipment finance and merchant services — to small and mid-sized U.S. companies with annual revenues of $5 million to $50 million.

This business is led by **Raul Anaya**.

Business Banking is part of the Global Banking segment reporting to **Dean Athanasia**, head of Regional Banking.

GLOBAL COMMERCIAL BANKING

Provides treasury, lending, leasing, advisory, and debt and equity underwriting services to middle market companies with revenues of $50 million to $2 billion across all major industries. It brings clients the full capabilities of the company paired with local service.

This business is led by **Wendy Stewart**.

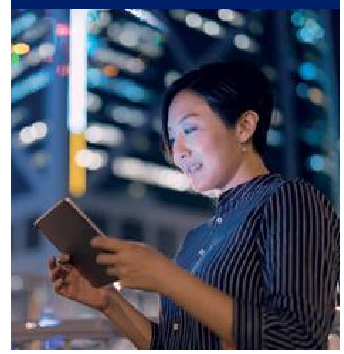
Global Commercial Banking is part of the Global Banking segment reporting to **Dean Athanasia**, head of Regional Banking.

GLOBAL CORPORATE & INVESTMENT BANKING

Provides clients around the world and across all major industries with solutions for treasury services, lending, leasing, advisory, and debt and equity underwriting. Serves corporate clients with more than $2 billion in revenues, financial institutions and government agencies.

This business is led by **Matthew Koder**.

GLOBAL MARKETS



GLOBAL MARKETS

Provides services across the world's debt, equity, commodity and foreign exchange markets. This includes liquidity, hedging strategies, industry-leading insights, analytics and competitive pricing to clients consisting of hedge funds, asset managers, pensions and other financial institutions.

This business is led by **James DeMare**.

Helping consumer clients on their financial journey

Retail Banking helps clients bank responsibly and grow with us, from their first checking account to a credit card to a loan for a car or home. Our broad network of professionals supports all 67 million Bank of America consumer, small business and wealth management clients online and in-person with personalized advice and guidance.

Led by Holly O'Neill, Retail Banking serves U.S. consumer clients with a full range of financial products and services through our extensive network of financial centers, ATMs, phone-based teams and award-winning digital banking capabilities, such as our Online and Mobile Banking platforms, Erica and Zelle.

This client focus is paying off. Last year, Bank of America was recognized with more than 280 industry awards for our innovation, our financial technology and delivering exceptional client services and solutions. We were ranked No. 1 in Customer Satisfaction in Retail Banking Advice in J.D. Power's 2021 study of Retail Banking Financial Health and Advice. We also won Best Digital Bank by The Digital Banker in the Retail Banking Innovation Awards in November 2021.

Helping clients today so they can grow for tomorrow
We provide industry-leading advice and expertise, as well as the tools our clients need to improve their financial health, pursue their goals and succeed on their financial journeys. We offer safe, simple-to-use financial solutions with features that can be tailored to assist individuals and families in moving toward greater financial resiliency, such as:

- **Bank of America Advantage SafeBalance Banking**, an account that helps prevent overdraft fees
- **BankAmericard® Secured Card**, a credit card to establish, build and strengthen credit history
- **Keep the Change®**, to build savings automatically when making debit purchases
- **Balance Assist**, a low-cost solution for clients to manage their short-term liquidity needs
- **Balance Connect™**, for overdraft protection available to clients in all states
- **Better Money Habits**, free financial education with resources, guidance and tools on ways to save, plan and manage money

We help low- and moderate-income (LMI) home buyers across the country begin to build their personal wealth and family

legacy through the power of homeownership. Last year, we tripled the Bank of America Community Homeownership Commitment® to $15 billion through 2025, offering low down payment mortgages, down payment and closing cost assistance, resources and expertise.

We continue our long tradition of helping individuals, families and small businesses lead successful financial lives. Through our community-centered approach, we help advance the economic mobility of LMI clients and communities by connecting them to the solutions, financial education, jobs and capital they need to increase financial resiliency and thrive.

We have designated some of our financial centers for community banking that are staffed with professionals trained and certified in Better Money Habits financial education, and regularly hold learning sessions with clients and the community focused on day-to-day money management, budgeting planning and ways to save.

Delivering Responsible Growth and sweeping change
We have made significant changes to our overdraft services and solutions, reducing clients' reliance on overdraft and providing resources to help clients manage their deposit accounts and finances responsibly.

We recently announced sweeping changes to overdraft services in 2022, including eliminating non-sufficient funds (NSF) fees and reducing overdraft fees from $35 to $10. With these and earlier changes, we expect to reduce overdraft fee revenues by 97% from 2009 levels. These latest steps further support our clients and empower them to create long-term financial wellness.

We will build on our strong foundation of excellence as Retail Banking continues to drive Responsible Growth and deliver the exceptional care and products — both digital and in-person — our clients expect and deserve.

RETAIL BANKING

Offering a wide range of financial products and services to millions of U.S. consumers

Led by:
Holly O'Neill

- **Ranked No. 1 in Customer Satisfaction** in Retail Banking Advice in J.D. Power's 2021 study of Retail Banking Financial Health and Advice
- **Named Best Consumer Digital Bank** in the U.S. by Global Finance
- **Ranked No. 1 Mortgage and Home Equity Lending** Digital Experience (Keynova 2021 Mortgage-Home Equity Scorecard)

70%
of overall households actively using digital platforms at year-end 2021

$231B
sent and received via **Zelle**, **up 64%** year-over-year

427M
Erica interactions, up 217% year-over-year

Delivering a digital-first-plus-advice model

Nearly every day, 27 million clients and 11 million business owner clients turn to our Preferred line of business for all their banking, lending and investing needs. Our high-tech, high-touch personalized approach helps enable us to drive Responsible Growth by delivering a strong combination of expertise and advice, innovative products and award-winning digital capabilities — all aligned to meet each client's unique financial needs and life priorities.

Helping to address personal and business financial needs
Led by Aron Levine, the team provides an industry-leading client experience, helping to ensure our people, products and services are available to clients whenever and wherever they want. In addition to our award-winning digital platform, clients have access to advice and guidance through a nationwide network of more than 30,000 financial professionals available via financial centers, centralized contact centers and Merrill offices.

We offer clients a full range of banking solutions, from customizable checking and savings account options to our Corporate Employee Banking and Investing program, which helps large and mid-sized companies better support the financial needs of their employees. We deliver award-winning lending solutions and advice, enabling clients to achieve homeownership through a mortgage, reduce debts with the refinance of an existing mortgage, or tap into their home's equity to help pay for home improvements, as well as vehicle loans for personal and business needs. Our digital-first approach has led to innovations over the last decade, including Life Plan®, our personal digital experience that allows clients to set and track near- and long-term goals based on their life priorities.

We also are reinventing what it means to be a confident and informed investor. We provide clients integrated access to a full range of Bank of America banking and Merrill investing services, including our Merrill Edge Self-Directed Platform, to help clients confidently put their investing ideas into action, and Merrill Guided Investing, an investment advisory program aligned to our clients' individual goals that is built, monitored and rebalanced by Merrill investment professionals — and provides the option to work one-on-one with an advisor.

Rewarding clients for deepening their relationship
The more clients do with us, the more their benefits grow. We provide extensive rewards and benefits across clients' entire relationship. Since launching in 2014, our Preferred Rewards program has grown to 9.4 million members, including members of our small business-focused program. Members currently receive $3 billion in rewards annually, reporting 87% satisfaction with their banking relationship with a 99% retention rate. In 2021, we expanded the program with additional benefits for our high and ultra-high net worth clients by adding the Diamond and Diamond Honors tiers.

Supporting the unique needs of small business owners
We continue to be among the nation's largest small business lenders, ending the year with $22 billion in total outstanding loans. Our portfolio of loans, deposits and investments to Community Development Financial Institutions (CDFIs)

PREFERRED BANKING

Providing advice and solutions to meet the banking, lending and investing needs of clients, business owners and small businesses

Led by:
Aron Levine

- **9.4M total clients enrolled in Preferred Rewards** at the end of 2021 (includes clients in Consumer, Small Business and our wealth management businesses)
- **Leading small business lender**, with $22B in total outstanding loans at the end of 2021
- Recognized as the **industry leader for access to banking services for brokerage clients** (awarded to Merrill by Stockbrokers.com, 2021)

exceeds $2 billion, including approximately $100 million in deposits to Minority Depository Institutions (MDIs) and investments of nearly $43 million of equity in 22 MDIs as part of our recent commitment of up to $50 million. We provide capital to more than 250 CDFIs across all 50 states, which supply affordable, responsible loans and technical assistance to low-income and other underserved clients and communities.

Clients turn to us for help with driving business success, including our Small Business Resources site, which shares helpful articles and tools, and the Bank of America Access to Capital Directory, a platform that launched in 2021 to help educate women-owned businesses. Our Small Business Owner Report, published every May, shares trends and data on entrepreneurs' business outlook and economic confidence, as well as key indicators of their success and community involvement.

41.4M

active digital users at year-end,[1] up 2M year-over-year

26%

of small business sales from digital at year-end, nearly 3X pre-2020 levels

5.6M

digital sales volume at year-end, representing 46% of total sales

[1] Represents mobile and/or online 90-day active users

Continuing to build the modern Merrill

In 2021 we made significant progress on our journey building a modern Merrill. Advisors helped clients navigate through uncertainty and stay on course toward meeting their financial goals, while mobilizing the power of our capabilities to reach new milestones for client service and Responsible Growth.

Under the leadership of Andy Sieg, Merrill continued to play a key role in strengthening our company by focusing on the following areas:

Comprehensive advice and planning
Merrill served its core segment of high net worth and ultra-high net worth clients by offering more comprehensive and personalized service across their financial lives — in investments, planning, banking and lending. Personal Wealth Analysis, our planning tool connecting clients' goals to investment solutions, broadened conversations

MERRILL

Serving high net worth and ultra-high net worth clients. Our personal advisor relationships ensure that we're helping each individual investor plan for and achieve their unique financial goals.

Led by:
Andy Sieg

- **Most advisors on Barron's** Top 1,200 Financial Advisors and Top 100 Women Advisors (2021)
- **Most advisors in Forbes'** Top Next Generation Advisors and Best-in-State Wealth Advisors (2021)
- **Nearly 80% of Merrill households** digitally active across the enterprise (year-end 2021)

with thousands of clients. Our clients responded by rating satisfaction with their advisors at 94%, an all-time high.[1]

Demand for banking services increased, leading to record loan and deposit balances. We met these requests by increasing the number of Wealth Management Bankers to more than 500 and leveraging the broad capabilities of Bank of America, working closely with every line of business.

New digital capabilities
The bank's investments in new digital capabilities helped advisors deliver the industry's leading experience for clients at every stage of their relationships. By year-end, nearly 80% of wealth management clients were using digital for more of their financial needs. Even after advisors began returning to the office, clients continued engaging digitally, while connecting with advisors in-person as needed.

Reflecting the communities we serve
Merrill continued to promote greater diversity among our colleagues and clients and a more inclusive culture.

We shared publicly the diverse make-up of our leadership and advisors as well as our diversity initiatives and goals. We believe that leading by example will benefit the industry, our business and our clients. And we're making good progress: Merrill's senior leadership team is 50% diverse,[2] and we're diversifying our advisor population overall.

Our commitment to listening to and understanding diverse viewpoints led to one of our most important research projects in recent years, "Diverse Viewpoints: Understanding Affluence in the U.S." The insights we gleaned from this and other studies are helping us better understand how these communities grow their wealth and underscore our commitment to fully appreciating and reflecting the diverse communities we serve.

Developing the next generation of advisors
Merrill is focused on helping advisors succeed at every stage of their careers, and recognizes the importance of carrying forward the traditions of today's advisors who, time and

again, win top industry rankings. Last June, we launched the Advisor Development Program, designed to train advisors more effectively than ever, with a new emphasis on servicing all aspects of our clients' financial lives.

We're targeting an 80% graduation rate — above current industry success rates. At the end of 2021, approximately 1,000 trainees were in the program, connecting with leads and prospects.

Continued growth
Finally, the success of these efforts to transform our business resulted in the strongest yearly performance in our history. Client balances rose to $3.2 trillion, we added approximately 23,300 net new households and the business recorded its strongest net new flows of client balances ever — $122 billion. Modern Merrill is, and will continue to be, a powerful engine for serving clients as a core part of Bank of America.

$3.2T

record client balances at year-end 2021

$122B

net new flows of client balances in 2021

23.3K

net new households in 2021

[1]Based on proprietary client surveys

[2]Includes women and people of color

A highly personalized, team-based approach

Bank of America's Private Bank delivers complete investment and wealth management solutions to ultra-high net worth clients with more than $3 million in investable assets.

Under the leadership of Katy Knox, through a highly personalized, team-based service, we offer clients the insights and guidance to help protect their wealth for generations to come.

The Private Bank performed strongly in 2021. Many of our clients have been motivated to reassess their priorities and legacy in light of the year's events. Clients are looking at their wealth, and its potential impact, more comprehensively. As a result, over the past several years, we more than doubled the number of conversations with clients around philanthropy, wealth and estate planning.

This momentum is translating into strong operating and financial performance. Total client balances rose to more than $600 billion, and net client growth is now exceeding pre-pandemic levels, with satisfaction among our existing clients reaching record highs.[1]

Individuals and families are also more closely considering the impact of their giving strategy. Our clients donated record amounts through our Charitable Gift Fund last year. Meanwhile, our philanthropic business has seen a dramatic increase in new commitments from non-profits and charitable organizations seeking more advice on endowment management, grant-making and governance over the past two years.

As clients enjoy greater flexibility in where they live and how they work, a record 85% are now digitally active. They are engaging more frequently with our online and mobile capabilities, driving increases in Erica sessions, Zelle and digital wallet transactions. Our digital tools are increasingly an important capability for our clients.

A leading market position to drive Responsible Growth
Clients continue to emphasize purpose-driven planning and seek out holistic solutions for their long-term needs. With an estimated $70 trillion of wealth expected to transfer between generations in the next few decades, demand for wealth and estate planning services are also expected to remain high.

Expertise in wealth structuring, trust and estate planning, philanthropic solutions and managing specialty assets such as art and alternative investments positions us well to meet these evolving needs. As the largest provider of personal trust and fiduciary administration in the U.S., we were recently recognized as the Best Private Bank in North America. We've also earned distinction for our customer service, succession planning and use of technology to improve the client experience.

We drive Responsible Growth by leveraging the strength of Bank of America to seamlessly deliver our capabilities. As clients seek a single point of access for their investment needs, we have successfully expanded our collaboration with Consumer Investments, placing dedicated Merrill Edge Financial Solutions Advisors within Private Bank offices to help address the full spectrum of our investment solutions.

PRIVATE BANK

Providing comprehensive investment and wealth management solutions to ultra-high net worth clients with investable assets of more than $3M

Led by:
Katy Knox

- **Named Best Private Bank** for Philanthropic Services (Global) and **Most Innovative Private Bank** (North America) by Global Finance (2021)
- **Named Best Private Bank in North America** by Digital Banker (2021)
- **85% of Private Bank clients digitally active** across the enterprise (year-end 2021)

[1] Based on proprietary client surveys

We also drive closer integration with our Global Banking and Global Markets colleagues, expanding how we serve business owners and large, sophisticated Private Bank clients — creating thousands of referrals between The Private Bank and other lines of business, generating significant new business for our company.

Investing to meet client expectations

Delivering an unsurpassed client experience and growing with a customer focus requires continuous investment in our people, processes and technology. Clients expect us to seamlessly blend human and digital experiences, so we are investing in our human capital to develop our talent and streamline how we work.

Focusing on diversity, career mobility and training has put us in a strong position to add more than a hundred new advisors in the coming years. Additionally, we continue to automate work flows and digitize more client transactions, driving even greater engagement and client satisfaction.

$625B

record client balances
at year-end 2021

$360B

record AUM balances
at year-end 2021

1.9K

net new relationships added
in 2021

Helping mid-sized companies grow and invest for the future

In the dynamic space where small businesses grow into large corporations, Business Banking serves companies with revenues generally between $5 million to $50 million in more than 160 local markets throughout the United States. Led by the relationship manager, our client teams deliver strategic, integrated financial advice and solutions to help companies grow, improve liquidity and cash flow, manage U.S. and international payments, and invest for the future.

Under the leadership of Raul Anaya, Business Banking delivers a core set of primary services, including credit, treasury management, merchant services, foreign exchange and equipment financing, delivering the full power of the enterprise.

Through our teammates at Merrill and The Private Bank, we connect our clients with financial advisors to assist with personal finances, tax planning and succession planning. Workplace Solutions delivers 401(k) and other employee programs, which many of our clients find helpful in making them "an employer of choice" in their communities.

Delivering advice through each stage of the business owner journey

Our clients see us as the advisory banking partner they need — offering thought leadership, strategic advice and integrated financial solutions to empower them to achieve their goals at each stage of their business owner journey.

Our focus on building deep and lasting client relationships allows Business Banking to drive Responsible Growth — and we're also acquiring new, high-quality clients through expanded prospect engagement, all within our risk framework.

Our clients are largely entrepreneurs and family-owned businesses across the U.S. who remain optimistic about their long-term growth prospects. Today, while many of our clients face external challenges, we support them through these evolving times.

Our Community Business Strategy focuses on the fastest growing client segments that drive the national economy — Asian, Black/African American, Hispanic-Latino, veterans and women-owned businesses. Each shares common needs, and each presents unique opportunities.

BUSINESS BANKING

Serving more than 20K U.S.-based clients with revenues between $5M and $50M

Led by:
Raul Anaya

- Delivers a core set of primary solutions, including **credit, treasury management, merchant services, foreign exchange and equipment financing** through a digital client experience
- Serves approximately **1 in 7 U.S. businesses**
- Named **North America's Best Bank for Small to Medium-sized Enterprises** by Euromoney magazine (2021, sixth consecutive year)

Evolving landscape
In our evolving economic environment, advisory dialogue is valued more than ever, as clients seek our thought leadership on economic forecasts, industry trends, public policy, and general business and consumer sentiment. Additionally, clients are seeking macro-economic guidance to stay ahead competitively on issues such as carbon neutrality/net-zero greenhouse gas emissions and to adjust operations to manage through current business challenges.

Client demand for high-quality digital solutions has accelerated as businesses continue to transform many aspects of their operations, with more than 80% of clients transacting with us digitally in 2021. The past two years saw accelerated adoption of core platforms which has increased client expectations — from reducing time spent on routine bank processes, such as client onboarding and document exchange, to driving operating efficiencies that help reduce their own employees' time spent on manual processes.

While we have experienced record growth in client digital engagement, clients continue to show a preference for both in-person and virtual interactions. As we emerge from the pandemic, we anticipate clients will seek in-person dialogue for strategic and advisory consultation, with a sustained preference for leveraging virtual channels for more routine transactions.

Focused on growth
Business Banking is in a position of strength to drive financial results for the company. Continued focus on growing our loan and deposit portfolios can drive revenue growth and higher net interest income.

By listening to our clients and delivering the financial advice and strategic solutions to help them achieve their dreams, we can deepen existing relationships and successfully capture untapped prospect opportunity to further strengthen the economy and the communities we serve.

Powering companies for growth

Global Commercial Banking (GCB) is one of the largest commercial banks in the U.S., providing financial services for clients with revenues of $50 million to $2 billion, primarily in the U.S. and Canada, as well as their international subsidiaries.

Led by Wendy Stewart, the GCB team serves one in five middle market companies in the U.S., with specialty functions focusing on commercial real estate firms, technology companies, healthcare systems, education institutions, not-for-profit organizations, automotive/vehicle companies, and sports leagues, teams and stadiums. Thirty-four percent of U.S. Fortune 1,000 companies are covered by GCB.

During 2021, deposit growth was strong, with loan growth improving over the year. Additionally, client satisfaction scores remained high. We're positioned to drive Responsible Growth momentum by continuing to serve all our clients' commercial banking needs.

Delivering GCB's vision

We're revolutionizing banking for our commercial clients so they can grow and prosper, delivering sought-after advice, valuable solutions, exceptional service and seamless experiences.

Our bankers partner across our company to provide a wide range of financial services, integrated working capital management and treasury solutions, and underwriting and advisory services through our client relationship teammates located in the U.S. and around the globe.

Our lending products and services include commercial loans, leases, commitment facilities, trade finance, commercial real estate lending and asset-based lending. Our treasury solutions include treasury management, foreign exchange and short-term investing options.

Bringing all of Bank of America's capabilities to the table, we also deliver risk management, merchant services, international subsidiary banking and investment banking, with offerings that range from debt and equity underwriting and distribution to merger-related and other advisory services. Plus, we bring clients valuable solutions for their own employees, including 401(k) and other financial life benefits.

GLOBAL COMMERCIAL BANKING

Serving thousands of companies with revenues of $50M to $2B

Led by:
Wendy Stewart

- One of the largest commercial banks, **serving approximately 1 in 5 U.S. middle market companies**
- Providing relationship management coverage in **113 U.S. cities and all 50 U.S. states**
- **Recognized by J.D. Power Certified Customer Service Program** for providing "an outstanding customer service experience" (2021)

Although optimistic about the future, more than ever, companies are navigating in uncertain times, depending on the expert advice, analysis, thought leadership and innovative ideas our relationship bankers bring to help clients make smart, strategic decisions.

Providing unparalleled solutions and service, paired with our increasingly powerful digital capabilities, helps make doing business for our clients faster, smarter and more secure.

Accolades for Global Commercial Banking

For 12 consecutive years, J.D. Power has recognized the bank's Corporate Banking, Global Commercial and Business Banking Services for providing "an outstanding customer service experience." Euromoney Awards for Excellence 2021 named us North America's Best Bank for Corporate Responsibility and, for six consecutive years, North America's Best Bank for Small and Medium-Sized Enterprises. Our asset-based lending was ranked No. 1 in the U.S. for lead left and bookrunner by Refinitiv.

Powering our communities through development and diversity

Our clients place great value on strong, vibrant and diverse communities, so Global Commercial Banking has developed our business model to care for our people, our communities and the environment.

For example, Bank of America Community Development Banking provides financing for affordable housing and economic development across the U.S. In 2021, we provided more than $6.6 billion in debt and equity financing, creating more than 11,600 units of affordable housing for U.S. individuals, families, veterans, seniors and the previously homeless. In addition, we also support the long-term sustainability of communities through financial education programs.

Clients are encouraged to consider investing all or a portion of their excess liquidity in green or environmental, social and governance (ESG)-friendly investment options. Additionally, clients are taking advantage of digital treasury solutions and moving away from paper-based solutions.

And because our clients strongly support diversity and inclusion, we hosted GCB clients at a total of 118 diversity and inclusion events around the world.

75%

of commercial, corporate and business banking clients are digitally active (CashPro® & BA360 platforms)

Growing with and delivering for our clients

Global Corporate & Investment Banking (GCIB) strives to deliver integrated financial solutions, capital markets execution and transformative advice to clients across a broad range of large corporate, middle market and emerging growth companies.

Under the leadership of Matthew Koder, our banking teams provide clients with solutions across the entire capital structure and execute a broad range of transactions including loans, leases, bonds, convertibles, IPOs, follow-on offerings, private capital fundraising, and mergers and acquisitions, in addition to providing best-in-class global liquidity and treasury management solutions.

As major economies around the world recovered last year, GCIB was committed to being a steadfast and trusted partner with the goal of growing with and delivering for our clients, a hallmark of our client-first culture.

Meeting both virtually and in-person, our bankers advised on and executed a record number of investment banking advisory and capital markets transactions with clients around the globe. Collectively, these efforts raised $963 billion across global capital markets, which contributed to a new high watermark of $8.9 billion in investment banking fees in 2021, representing an increase of 24% over the previous record set in 2020. We see all of these achievements as a sign of our clients' confidence in our people, our expertise and our ability to effectively deliver the full breadth of talent and resources across Bank of America.

Additionally, GCIB ended the year with a record quarter of investment banking revenues. In corporate banking, a focus on Responsible Growth and strategically supporting our clients saw fourth-quarter absolute loan growth pick up pace, bringing about one of our strongest quarters ever. Average deposits grew through the year, and especially in the fourth quarter with a 21% year-ago-quarter increase driven by organic growth and deal-related inflows.

A focus on technology and ESG

As technological innovation accelerates change across all industries and the overall economy, GCIB has leveraged technology to improve our client interactions, uncover insights, increase efficiency and manage risk well. Recent recognition of our continued focus on digital innovation in 2021 includes awards for Best Mobile Cash Management Software — CashPro (Global Finance) and the No. 1 ranking in Digital Functionality, Digital Platform Design and Provides End to End Digital Process (Greenwich Associates).

Environmental, social and governance (ESG) and making positive contributions to society are important for Bank of America and, increasingly, for many of our clients. The transition to a low-carbon economy means that a significant flow of capital will have to be put to work in an efficient and effective manner. Our clients will need advice and expertise, and we continue to invest to build this capability. To this end, within GCIB, we have established a new team, ESG Advisory and Financing Solutions, to help our clients across industry sectors determine how ESG impacts their cost of capital and strategic initiatives and to assist them in navigating through climate transition. This new team is well-positioned to advise our clients, as Bank of America continues to be at the forefront of ESG financing — in 2021, GCIB was the No. 1 underwriter of U.S. ESG corporate bonds.

As we look to the future, we will continue to work relentlessly for our clients. We are committed to leveraging our resources and franchise to deliver for them — and grow with them — as a steadfast and trusted partner for the long term.

GLOBAL CORPORATE & INVESTMENT BANKING

Providing advisory, underwriting and banking services to thousands of middle market, emerging growth and large corporate clients worldwide

Led by:
Matthew Koder

- Providing coverage for **70% of global companies with market capitalization of $10B+**
- Continued to drive investment banking fee growth, reaching a **new high in 2021 of $8.9 billion**
- Named by Global Finance as **2021 Outstanding Financial Innovator — Global**

Diversified, balanced and growing

Global Markets brings the power of our leading global franchise to local clients around the world by offering sales, trading and research services to institutional clients across fixed-income, credit, currency, commodity and equity businesses. Our product coverage includes securities and derivative products in both the primary and secondary markets.

Under the leadership of Jim DeMare, we provide market-making, financing, securities-clearing, settlement and custody services globally to approximately 8,000 institutional clients in support of their investing and trading activities. We also work with teammates across the company to provide commercial and corporate clients with risk management products using interest rate, equity, credit, currency and commodity derivatives, foreign exchange, fixed-income and mortgage-related products.

As a result of our market-making activities in these products, we manage risk in a broad range of financial products, including government securities, equity and equity-linked securities, high-grade and high-yield corporate debt securities, syndicated loans, mortgage-backed securities, commodities and asset-backed securities.

A strong year delivering Responsible Growth

In 2021, we navigated the markets well and had the strongest year of reported sales and trading revenue in the last decade. We achieved positive momentum in many areas — from financial performance to execution on strategic priorities.

Our client share increased, which helped the team improve sales and trading revenue share among the top five U.S. banks and provided a strong foundation for returns in the long run through increased financial resources in line with Bank of America's strategic plan.

We also made progress in deepening relationships with our largest clients and expanding business with mid-tier and smaller clients. The team continues to grow the Global Markets business across products and regions to better serve clients as they grow, too.

GLOBAL MARKETS

Providing services across the world's debt, equity, commodity and foreign exchange markets to thousands of institutional clients

Led by:
James DeMare

- Employee presence in **30 countries**, serving a global franchise
- **Global Derivatives House of the Year** and **Clearing House of the Year** (GlobalCapital, 2021)
- **No. 2 Global Research Firm** (Institutional Investor, 2021)

In 2021, we navigated the markets well and had the strongest year of reported sales and trading revenue in the last decade.

We have invested in our financing, market-making and lending areas to better compete. We are also making significant infrastructure investments in technology and digital platforms to advance the business' capabilities and automation, including increasing straight-through processing.

These efforts will improve our efficiency, reduce risk and drive Responsible Growth. For example, this year the team improved operating efficiency with the Global Markets Central Risk Book and Equities Financing Operational Excellence programs.

Global Markets was recognized by the industry for our efforts in 2021, including Global Derivatives House of the Year and Clearing House of the Year by GlobalCapital; Overall Leader for North America in Sustainable Finance by Global Finance; No. 2 Global Research Firm (announced in 2022) and No. 2 Global Fixed Income Research Team by Institutional Investor; and No. 1 Municipal Bonds Underwriter by Refinitiv.

Evolving with our clients' needs

The size and breadth of our markets and clients have increased significantly over the past five years. Client needs continue to evolve, driven by the dynamics of active, passive and purpose-driven investing, such as ESG, coupled with the forces of technology, regulation and profitability.

Our global client base values us for providing a diversified, balanced business model that delivers both scale and breadth of products as their capital markets and trading activities increase. We do this by matching local presence with a class-leading global platform of top-tier sales, trading and research; strong and expanding capabilities in emerging areas like sustainable finance and ESG; and the advantages of a data-driven and technology-enabled business.

We continue to build our business and the value we deliver to clients upon a simpler and more efficient platform with superior execution capabilities that best serve their needs.

A global team that delivers locally

Our market presidents lead the way to deliver our capabilities to clients in every community and to support non-profit partners with their important work. Local presidents bring community knowledge and relationships to help ensure our eight lines of business work together for each client. Local leaders also tap into Bank of America capabilities to strengthen partnerships with local non-profits, and create opportunities for our local employees to champion our culture of diversity and inclusion while taking advantage of the many programs we offer for teammates to develop and grow.

Demonstrating the success of this strategy, our Greater Washington, D.C. market, which includes 150 financial centers and more than 2,400 teammates from all areas of our company, delivered exceptional results for the Greater Washington, D.C. clients and community in 2021.

"While so many know the D.C. region as a great place to visit, we know it as home," said Larry Di Rita, President of Bank of America Greater Washington, D.C. "We understand the economy and culture, the strengths and challenges. That helps us deliver our global capabilities through local focus, with better results for clients and for our company."

At the end of 2021, Bank of America was the top retail deposit holder in Greater Washington, D.C., with 10% year-over-year growth. The lines of business in the market, working as a single team, have had a number of other wins including:

- **Global Corporate & Investment Banking (GCIB)** was sole bookrunner for a $100M+ first follow-on equity offering for a D.C.-based public company, following an introduction from a Private Bank team with an existing relationship with a board member at the company.
- When a local publicly-traded client was seeking ways to attract and retain talent, our **Global Commercial Banking (GCB) team** partnered with Corporate Employee Banking & Investments (CEBI) and **Merrill** to enhance the company's benefits. This led to an increase in employee satisfaction for them and double-digit growth in new client households using our products.
- **The Private Bank** worked with several GCB privately-held business clients to provide pre-transaction planning and advice in advance of the clients selling their businesses.
- A **Merrill** wealth management client needing a more robust financial services platform developed a comprehensive, full relationship with **Business Banking**, including deposit and treasury management and lending.

"Our line of business teams deliver together for our clients in Greater D.C. every day," said D. Steve Boland, Chief Administrative Officer and Greater Washington, D.C. market sponsor. "All the while, we are addressing the community's greatest challenges through partnerships with local organizations and leaders who deliver on a global scale."

Guided by our Responsible Growth principle that success must be shared to be sustainable, the Greater D.C. leadership team invests across this diverse region. In 2021, we worked with local partner *Building Bridges Across the River* for a $1M grant to help construct the **11th Street Bridge Park**, Washington's first elevated public park, to be built on the piers of the old 11th Street Bridge across the Anacostia River. The new park will literally bridge the Anacostia neighborhood to the bustling Washington Navy Yard area and spur economic development east of the river. Our support will help provide 274 construction jobs and 38 full-time jobs, and create a green space to better connect neighborhoods separated by income, race and geography.

As part of the Anacostia-area project, our Greater D.C. team also facilitated the building of a 76-unit mixed use affordable housing development; invested in the Washington Area Community Investment Fund (WACIF) to establish a small business center for entrepreneurs of color; and enabled the expansion of local non-profit Bread for the City's health clinic for preventative health care.

"Through our business offerings, our partnerships with non-profit and community leaders, and the trust of our neighbors, we are driving meaningful growth and helping create opportunity and prosperity in Greater Washington, D.C.," said Larry.

This approach to local delivery is repeated in each of our 93 markets across the United States every day, helping us deliver Responsible Growth, improve the financial lives of our customers and clients, and strengthen our communities.

National Community Advisory Council provides valuable perspective

To better understand and responsibly address the needs of our clients and communities, we seek outside perspective. In 2005, we formed our National Community Advisory Council (NCAC), which has evolved to provide guidance on a range of issues affecting our clients, employees and communities. NCAC is comprised of senior leaders from social justice, consumer advocacy, community development, environmental and research organizations who offer critical feedback, engage us in healthy debate and deliver well-informed advice on our business practices and products, community investments, diversity and inclusion efforts and more.

NCAC members' depth of knowledge on the needs of lower income individuals contributed to our developing solutions and resources to help our clients manage their finances responsibly, including SafeBalance Banking, Affordable Loan Solution™, Better Money Habits, Balance Assist and the sweeping changes to our overdraft policies announced in early January 2022.

"This comprehensive program by Bank of America, including eliminating and reducing fees, continuing its low-cost Balance Assist loan program and providing early access to deposits, provides the tools for its customers to succeed financially. It sets a gold standard for overdraft reform, and the Consumer Financial Protection Bureau should promptly adopt rules that provide these protections to all bank customers." — **Mike Calhoun**, President, Center for Responsible Lending

The NCAC meets at least twice annually, and has been meeting with greater frequency during the pandemic. Our CEO and senior management team join these meetings regularly, and our independent Board of Directors members have had the opportunity to meet and hear directly from our NCAC advisors. These leaders are important and valuable voices helping us deliver Responsible Growth.

NCAC MEMBER ORGANIZATIONS

- American Enterprise Institute
- Asian Americans Advancing Justice — Los Angeles
- Aspen Institute Latinos and Society Program
- Brookings Institution
- CDC Small Business Finance
- Center for Climate and Energy Solutions (C2ES)
- Center for Responsible Lending
- Ceres
- Clean Air Task Force
- Consumer Federation of America
- Enterprise Community Partners
- Financial Health Network
- Harvard Kennedy School, CSR Initiative
- Hope Enterprise Corporation
- Liftfund
- NAACP
- National Community Reinvestment Coalition
- National Urban League
- Oblate International Pastoral Investment Trust
- Opportunity Finance Network
- Self-Help Credit Union
- Southern Bancorp, Inc.
- The Leadership Conference on Civil and Human Rights
- The Pew Charitable Trusts
- UnidosUS
- Urban Institute
- World Resources Institute

Investing in diverse entrepreneurs

In 2021, we built on our long-standing efforts to help create opportunities for people and communities of color, including supporting homeownership, creating career opportunities, initiating our second $2 billion Equality Progress Sustainability Bond and running our 30-year-old formal Supplier Diversity & Responsible Sourcing Program.

In addition, we have committed $1.25 billion over five years to advance racial equality and economic opportunity. As part of that effort, we've dedicated $350 million to minority- and women-led companies through capital investment by mission-focused venture funds, with more than $300 million of that funding committed to 100+ minority-focused and minority-led equity funds in just over a year.

These investments further our work to support entrepreneurship and the growth of small businesses, helping to diminish or eliminate the barriers that make it difficult for people of color to access start-up and growth capital. Addressing this gap requires significant, systematic change.

We proactively sought out and invested in minority-focused and minority-led equity funds that provide capital to under-represented minority and women entrepreneurs and small business owners. These funds help owners establish and grow their businesses, create jobs and improve financial stability in local communities across the country. We expect our growing portfolio of funds to invest in 2,000+ minority- and women-led companies over the next five years.

Of the funds we have currently in our portfolio:

- **67% are led by Black/African American managers**
- **24% are led by Hispanic-Latino managers**
- **57% are led by women**

Research suggests that funds led by diverse leaders generate returns that are significantly higher than the overall average of the venture capital industry. By focusing on both the amount of capital we're committing and the quality and sustainability of the partnerships we're creating, our portfolio of funds is designed to be profitable over the investment cycle. Those profits will be invested in new and follow-on funds raised by our existing partners, driving Responsible Growth. We intend for our investment to be a force multiplier, encouraging our peer institutions to deepen their own investments in these under-capitalized funds.

"For a first-time fund, having institutional support from BofA was critical to the momentum of our fundraising process. Early into our partnership, we are already leveraging Bank of America's full enterprise to deliver value for our entrepreneurs and LPs."

Maria Velissaris
Founder, SteelSky Ventures | Atlanta, GA

"Our partnership with Bank of America showcases the company's support of our mission to create a more equitable future for women of color entrepreneurs. The diverse team of bankers who are dedicated to our Fund make themselves available for getting our founders access to the resources they need to obtain success."

Arian Simone
President and CEO, Fearless Fund | Atlanta, GA

"Bank of America's innovative and principled approach to deploying this capital will have a lasting impact on our industry. Our partnership with the bank is empowering Cleo to create new gateways to wealth creation for our talented entrepreneurs."

Sarah Kunst
Co-founder, Cleo Capital | San Francisco, CA

Driving progress toward environmental and social sustainability

As a global financial services organization, we have set tangible sustainable finance goals and made measurable progress in mobilizing and scaling capital deployment to help drive social and environmental change. By unlocking the power of the private sector and partnering with the public sector effectively, we are addressing financing gaps where government or philanthropic funding falls short. Our sustainable finance strategy permeates what we do — for our clients, employees and in our communities — to promote an inclusive, lower carbon, enduring society for all.

We have taken a leading role in several forums focused on increasing global capital flows into sustainable projects and entities that address the U.N. Sustainable Development Goals. Our CEO Brian Moynihan chairs the World Economic Forum's International Business Council and has been working with global corporate executives and accounting firms to define and democratize various environmental, social and governance metrics that companies can report, regardless of their industry or region. **(You can find updated Stakeholder Capitalism Metrics for our company on page 54.)** Brian also serves as co-chair of His Royal Highness The Prince of Wales' Sustainable Markets Initiative and is a founding member of the Council for Inclusive Capitalism at the Vatican, under the guidance of His Holiness Pope Francis. Additionally, Bank of America contributed to the founding of the Rocky Mountain Institute for Climate Aligned Finance and the Net-Zero Banking Alliance within the Glasgow Financial Alliance for Net Zero. We are one of the founding members of the U.N. Global Investors for Sustainable Development Alliance and a Steering Committee member of the World Economic Forum's Financing the Transition to a Net-Zero Future.

Sustainability guides how we conduct our business and operations as well as how we pursue Responsible Growth across core lending and investments, equity and debt capital markets activities, advisory services, supply chain financing and management, daily operations and engagement with internal teammates. As we consider our role in supporting a smooth transition, we continue to partner with global clients on clean energy and power generation and transmission, sustainable transportation with the emphasis on electric vehicles and sustainable fuels, sustainable food and agriculture, clean water and sanitation, and carbon capture and offsetting solutions, as well as more capital deployment in affordable housing, healthcare, education, and minority- and women-led businesses and underserved communities.

Sustainable finance milestones

Since 2007

- Mobilized and deployed approximately $350B in capital to support the environmental **transition to a low-carbon economy**

2019

- **Achieved carbon neutrality,** one year ahead of schedule

2020

- Mobilized and deployed **$100B+ in sustainable finance activity**
- Issued our first Equality Progress Sustainability Bond ("EPSB") for **$2B to advance racial equality, economic opportunity and environmental sustainability**, the first offering of its kind in the financial services industry

2021

- Set a goal to **achieve net-zero greenhouse gas emissions before 2050** in our financing activities, operations and supply chain
- Set a goal to deploy and mobilize **$1.5T of capital in sustainable finance by 2030** that delivers for both environmental transition ($1T out of the total goal) and inclusive development
- Mobilized and deployed **approximately $250B in sustainable finance activity**, an all-time high and significant increase over 2020 levels
- Under our announced **ESG-themed Issuance Framework**, issued our second EPSB for $2B, **broadening the scope of the target populations** to include women and Asian American, Pacific Islander and Indigenous people, along with Black/African American and Hispanic-Latino populations

Racial equality and economic opportunity

Our longstanding commitment to advance racial equality and economic opportunity includes efforts from across our company. Examples include:

- We tripled our Bank of America Community Homeownership Commitment® to $15B through 2025 with a goal of helping 60K low- and moderate-income (LMI) individuals and families to purchase a home.
- We committed $60M to increase access to capital and career opportunities for Black, Indigenous, and People of Color (BIPOC) affordable housing developers.
- As part of our $1.25B, five-year commitment to advance racial equality and economic opportunity, we've committed more than $450M. This includes:
  - $43M to 22 Minority Deposit Institutions (MDIs) and Community Development Financial Institutions (CDFIs)
  - More than $300M to over 100 equity funds to provide capital to diverse entrepreneurs and small business owners
  - $25M to 21 Historically Black Colleges and Universities, Hispanic-serving institutions and community colleges

Sustainable finance

We mobilized and deployed approximately $250B in sustainable finance in 2021 as part of our $1.5T by 2030 sustainable finance goal to support both environmental transition and inclusive development. Highlights include:

- We issued our second $2B Equality Progress Sustainability Bond, designed to help advance racial and gender equality, economic opportunity and environmental sustainability. Since 2013, Bank of America has issued $11.9B across nine Green, Social and Sustainability Bonds.
- We originated over $400M in loans and investments, raising our total portfolio to over $2B extended to CDFIs that finance affordable housing, economic development, small businesses, health care centers, charter schools and other community services.
- We provided a record $6.6B in loans, tax credit equity investments and other real estate development solutions through Community Development Banking to finance affordable housing and economic development. Between 2005 and 2021, we financed over 227K affordable housing units.[1]
- Since 2015, we have been a top renewable energy tax equity investor in the U.S. with a portfolio of approximately $12B at the end of 2021. Historically, our investments have contributed to the development of approximately 16% (38 gigawatts) of total installed renewable wind and solar energy capacity in the U.S.

Sustainable client balances

Our wealth management business has $55.6B in assets with a clearly defined ESG investment approach.

Climate actions and coalitions

We joined a number of coalitions in 2021 focused on collaborating to help accelerate the clean energy transition, including the Net-Zero Banking Alliance (NZBA), Glasgow Financial Alliance for Net Zero (GFANZ), Breakthrough Energy Catalyst, First Movers Coalition, the WEF's Clean Skies for Tomorrow Coalition and the WEF's Natural Climate Solutions (NCS) Investment Accelerator.

Climate risk

Our Global Climate Risk Executive oversees our efforts to identify, measure, monitor and control climate-related risks across all key risk types. Our approach to climate risk is outlined in our Environmental Social Risk Policy Framework, CDP and Task Force for Climate-related Financial Disclosures (TCFD).

[1] Based on estimated number of affordable housing units at the time of credit application; these numbers were not updated to reflect actual once the project was completed.

Sustainability in our operations

We are working to achieve net-zero greenhouse gas emissions in our operations, supply chain and financing activities before 2050, are carbon neutral and purchase 100% renewable electricity.

Arts and culture

We helped local economies thrive and advanced cultural understanding by investing more than $52M in support of arts and culture nonprofits around the world to connect people to art and its contribution to our society.

Philanthropic giving

We provided $370M in philanthropic investments to drive economic mobility in the communities we serve, including more than $94M in support of workforce development/jobs, $87M for community development/affordable housing and more than $81M for basic needs, including nearly $5M for natural disaster and humanitarian needs. We continue to invest locally through our signature philanthropic programs, Neighborhood Builders and Neighborhood Champions, supporting more than 1.4K local nonprofits and the leadership development of 2.8K nonprofit executives since 2004. Last year, we connected 4K young adults across 80+ markets to virtual and in-person summer jobs.

Employee giving and volunteering

We doubled the value of matching gifts for employee donations to select organizations supporting racial equality and economic opportunity, lowered the matching gift minimum in response to local and global disasters and encouraged virtual volunteerism. In response, employees gave more than 1.6M volunteer hours and directed more than $72M in combined individual giving and the bank's matching gifts, volunteer grants and other employee-directed giving programs to support more than 37K organizations globally.

Women's economic empowerment

We have helped 75K women from more than 140 countries and territories grow their businesses through partnerships with the Tory Burch Foundation, Vital Voices, the Cherie Blair Foundation, Kiva and Cornell University. We also launched the Bank of America Access to Capital Directory for Women Entrepreneurs, which has more than 300 sources of capital — ranging from grants to equity investments to loans.

Better Money Habits®

Through our Better Money Habits platform, we connect people to guidance and tools that help them take control of their finances. Since launching in 2013, free financial education on our Better Money Habits website has been accessed more than 3.5B times, across all platforms, including more than 7.6M site visits in 2021. Additionally, consumers clicked through to make an appointment nearly 33K times. Visits to our Spanish site, Mejores Hábitos Financieros™, are up 54% from 2020 to 2021.

Supplier diversity

Through our Supplier Diversity & Responsible Sourcing Program, we spend close to $2B with diverse suppliers each year.

Small business lending

We provide advice, tools, solutions and dedicated support to meet the unique needs of our 11M small business owners. We are a top lender in the Small Business Administration's (SBA's) 504 and 7(a) programs, according to the FDIC. More than half (57%) of all small business loan balances originated in 2021 were made to LMI businesses or to businesses in LMI areas.

Making Bank of America a great place for us all to work

In 2021, we continued to invest in our teammates as part of being a great place for us all to work. Helping teammates thrive during a year of change included offering programs to support them and their families through life's important moments, creating opportunities to help them grow and develop in their careers and being a diverse and inclusive workplace.

Our focus for much of the past two years has been on prioritizing our teammates' health and safety as the health crisis continues to evolve. We relied on strong partnerships with health experts, local health networks and other resources to inform decisions we made as a company and to provide appropriate guidance and resources to our employees. Additionally, we continued to address racial, social and economic issues facing our communities, many accelerated by the health crisis, both internally and externally. We created opportunities for employees to connect with and support each other, and advanced our long-term investments through community partnerships and grants to support education and job-skill programming as part of our $1.25 billion, five-year commitment to advance racial equality and economic opportunity.

We continued to evaluate and expand our benefits and programs already in place. We have built a strong and diverse talent pipeline through our campus recruiting programs — including one of our most diverse classes ever in 2021 — and through community partnerships. These partnerships are helping our company attract future leaders and advance racial equality and economic opportunity in the communities where we live and work. And we're seeing the progress from these combined efforts, including increases in our diverse representation of women and people of color.

We will continue to report on these items and the progress we're making as part of our ongoing commitment to being a great place to work for all teammates.

"Achieving Responsible Growth means we want to attract, develop and retain the best people, and to do that, we work hard to offer an inclusive workplace, career growth and development, and rewarding and comprehensive benefits that will help our employees thrive at every stage of their careers and their lives — that has never been more important."

Sheri Bronstein
Chief Human Resources Officer

Protecting employees and their families during the global health crisis

The health and safety of our employees is our top priority. In 2021, as the world faced a second year with the coronavirus, we helped safeguard and support our employees and their loved ones.

Supporting our teammates' health and safety
Throughout 2021, we supported our employees as they adapted to the developing global health crisis. We expanded our health and wellness programs, increased benefits for child and adult care, provided flexible time off and offered free COVID-19 testing as well as vaccine clinics in some of our workspaces.

To help teammates stay healthy, we offered 24/7 access to no-cost virtual general medicine and behavioral health resources for eligible employees, and invited health experts to share their latest insights into the evolving situation through video discussions and ongoing guidance and tips for preventing illness. We also offered support and resources to those diagnosed with or recovering from coronavirus, and our Life Event Services (LES) and Medical Benefits Escalations teams responded to employees facing challenges related to the pandemic.

Returning to the office safely
We continue to evolve our benefits, programs and support for teammates working in our U.S. financial centers, call centers and operation centers. This has included special compensation incentives, reimbursement for alternative forms of transportation and other tailored support, such as meals and meal subsidies in select U.S. locations.

To drive vaccine awareness and make it easy for employees choosing to be vaccinated, we offered paid time off to receive the shots. As vaccination rates increased and it was determined safe to do so, we began returning teammates to the office who had shared they were vaccinated through our secure online tool, with 30 days' advance notice.

As employees returned to the office, we put health and safety protocols in place, including conducting enhanced cleanings, offering onsite testing, providing health supplies (such as face coverings, gloves and hand sanitizer) and following other protocols recommended by health officials. By the end of 2021, more than 100,000 employees were working in the office and nearly all of our offices were open.

In 2022, we continue to monitor and react to the changing environment so we can help our teammates stay healthy and safe as the fight against the coronavirus evolves. We are hosting on-site COVID-19 vaccination and booster clinics and are reinforcing that receiving a booster is critical to protecting our employees and community. Earlier this year, we committed to donating $100 for each U.S. employee who registers that they received a booster, and have committed $10.6 million to help fight hunger in our local communities.

Promoting physical, emotional and financial wellness

We deepened our already-enhanced focus on the wellbeing of our employees and their loved ones in 2021, and provided comprehensive benefits and programs to support their overall wellness and help them thrive.

Physical wellness

In addition to the work we're doing to support our employees and their families during the global health crisis, our approach to physical wellness is based on how we can help employees address health risks and manage health care costs, including by providing robust health and insurance benefits as well as wellness and prevention resources.

For the ninth year in a row, we held medical premiums flat for U.S. employees earning less than $50,000 in performance year cash compensation. And, for the fifth straight year, employees earning between $50,000 and less than $100,000 saw nominal premium increases.

We enhanced benefits for employees and their families, including approximately 60,000 free virtual consults with physicians and behavioral health specialists.

We introduced a new cancer support benefit for employees and loved ones to help schedule expedited appointments, coordinate care, recommend a local facility and more.

We provided no-cost virtual medical consultations with Teladoc® and a 24/7 nurse line for those enrolled in our national U.S. bank medical plans.

Our popular Get Active! employee fitness challenge helped to encourage teammates to engage in physical activity during the health crisis. Together, our teammates took more than 5.3 billion steps and learned more about the importance of physical activity, nutrition, stress reduction and sleep.

Emotional wellness

Mental health has been an increasingly urgent and important focus as the global health crisis continues, and we've provided additional resources to help employees manage stress, build resiliency and pursue mindfulness.

We added access to licensed social workers and psychologists for youths aged 13-17 through Teladoc in addition to the no-cost virtual consultations with mental health specialists for employees in our national medical plans.

Over 23,000 telephonic and face-to-face confidential counseling sessions were supported through our Employee Assistance Program (EAP), and we began offering on-site EAP counselors to support employees at some of our office locations.

Our Life Event Services (LES) team provides teammates with personalized connections to resources when they need them the most by tapping experts inside and outside the company for assistance with significant events like domestic violence, natural disasters, terminal illness, survivor support and more.

We continued to provide additional resources from Thrive Global, including digital programs and access to our new training resource, Thriving Families modules, to assist with navigating new home and work routines.

All employees globally have access at no cost to mindfulness apps, company-led mindfulness training and daily mindfulness practices to keep a focus on mental health throughout the year.

We provide 26 weeks of parental leave for the birth or adoption of a child, 16 weeks of which are fully paid for eligible teammates.

Our Family Planning Reimbursement program provides teammates with the flexibility to choose reimbursement for eligible adoption, fertility and/or surrogacy expenses, up to a collective $20,000 lifetime maximum over the course of their career at the company, and our Family Support program (through our company's national health plans) offers additional support for new or future parents.

To help employees when child or adult care plans fall through, we increased our back-up care program to offer 50 days of back-up care for both adults and children (up from 40 days).

Understanding that time off is important for emotional wellness, we added more flexibility with vacation and paid personal/illness days for U.S. teammates, including:

- The option to carry over up to five days of accrued-but-unused vacation to the first quarter of the following year, every year
- Adding Juneteenth as a bank holiday, and allowing U.S. employees to now use up to five occasional illness days as personal days every year to take care of personal needs or to celebrate important cultural or religious holidays
- Providing employees time off to get vaccinated for COVID-19

Financial wellness

Our company's purpose is to help make financial lives better through the power of every connection. So, it's especially important that we support the financial wellness of our employees. That includes offering benefits and programs to help employees reach their short- and long-term financial goals, plan for the future and manage life's priorities.

In 2021, we introduced several enhancements to our Child Care Plus® reimbursement program to increase the number of teammates eligible for this benefit. We increased the reimbursement to $275 per month, per eligible child to offer more assistance with childcare costs when employees need to be at work.

We offer education benefits to teammates and their children to support their goals, from going back to school or pursuing job-related courses, degrees or approved professional certification exams to looking for guidance as their children prepare for college.

In 2021, we provided $22 million in tuition assistance—a 40% increase over 2020—for approximately 5,000 teammates. Employees are eligible to receive up to $7,500 per year to help with academic degrees or certifications.

We also offer free, one-on-one expert college admissions coaching for teammates and their children in school grades 8–12 to help plan for and navigate the college admissions and financial aid process.

We automatically enroll teammates into the 401(k) plan to help with saving for retirement. Based on service for eligible U.S. teammates, we make an annual contribution of 2%–3% regardless of employee 401(k) contribution level. We also offer matching contributions of up to 5% of eligible pay on a dollar-for-dollar basis.

Note: Specific programs vary by region. U.S. programs shown.

We offer an Employee Relief Fund, which provides employees up to $2,500 in relief per event for a qualified disaster and up to $5,000 for an unexpected emergency hardship. Employees can receive up to $10,000 in total grants in a rolling 12-month period. Since the beginning of the health crisis in 2020, we have provided a total of $13 million to teammates from the fund.

We continue to offer benefits and programs to help teammates focus on their financial health:

- Experienced independent financial counselors are available through our **Benefits Education & Planning Center** for teammates to receive free, personalized, confidential guidance to help them get the most out of their employee benefits and investment education to help them achieve their financial goals.
- The **Financial Wellness Tracker** available through Benefits OnLine® helps teammates assess where they are financially and connects them with personalized suggestions and company resources to improve their financial health.
- **Better Money Habits** is a free education resource helping people improve their financial wellness through our partnership with Khan Academy.

Recognizing and rewarding teammate performance

Our pay-for-performance compensation approach strives to recognize and reward performance with competitive and fair pay for the work done, at all levels of our company.

We have long been a leader in establishing a minimum rate of U.S. pay. In May, we built on this history when we announced an increase in our minimum hourly wage for U.S. employees to $25 by 2025. We took a step closer to our goal by increasing our minimum pay to $21 in October 2021, soon after we raised this same wage to $20 per hour in March 2020.

In addition, in January 2022, we announced we are once again providing our teammates Sharing Success compensation awards in appreciation for their extraordinary efforts over the past year. The total value of the awards provided to employees increased to $1 billion this year. This is the fifth time this award has been given since 2017, totaling nearly $3.3 billion.

Approximately 97% of our employees received an award this year. Most awards are in the form of Bank of America stock, providing the opportunity to further share in our company's long-term success. These awards are in addition to our standard annual compensation and bonus awards.

We also maintain robust policies and practices that reinforce equal pay for equal work, including reviews with oversight from our Board and senior leaders.

For over 15 years, we have conducted rigorous processes and analyses with outside experts to examine individual employee pay before year-end compensation decisions are finalized, and we adjust compensation where appropriate.

Results of this equal pay for equal work review showed that compensation received by women was on average more than 99% of that received by men, and that compensation received by people of color in the U.S. was on average more than 99% of that received by non-people of color employees.

Recruiting, developing and retaining our talented teammates

Ruth Bowen
Global Strategy & Enterprise Platforms
Vice President, Platform Manager

Developing a career path through community partnership

When Ruth Bowen completed her training with Year Up, an organization that offers tuition-free job training for young adults, she earned an internship at Bank of America through the company's Pathways program and is now a full-time employee. "Pathways has shaped my career by offering me access to resources, employee networks and mentors that I otherwise wouldn't have had," Ruth said. We exceeded our five-year goal of hiring 10,000 teammates from LMI neighborhoods through Pathways ahead of schedule, and have announced a new commitment to make an additional 10,000 LMI hires by 2025 through Year Up and similar organizations.

Tamille Bryant
The Private Bank
Managing Director,
Trust Fiduciary Executive

Manager development helping to build our future leaders

Tamille Bryant has been a manager for the past eight years of her 22-year career with the company. As her team grows, she relies on our industry-leading manager capabilities training — the Enterprise Manager Development Series (EMDS) — to help advance her skills. Last year, nearly 90% of managers participated in this series, in addition to our Manager Excellence Live sessions. "Each program module provides knowledge or skills that help me manage my team. The modules focused on diversity and inclusion, feedback and coaching have been especially impactful," Tamille shared.

Yamilet Rodriguez
Preferred Banking
Senior Vice President,
Performance Executive

Delivering skills and opportunity through The Academy

Yamilet Rodriguez was one of the company's first participants in The Academy, which has supported the career development of more than 65,000 teammates annually and was expanded last year to support teammates company-wide. "The Academy has helped me progress in my career and gain experience across the organization, since starting as a customer service representative to now serving as a performance executive. I've not found another company with anything like The Academy, with such a deliberate investment in our people and their success," Yamilet said.

Thiago Alday
Global Corporate & Investment Banking
Vice President, Investment Banker

Strengthening our diverse talent through recruiting and development

While completing his MBA, Thiago Alday — a Brazil native — connected with our campus recruiting partners and instantly felt like part of the team. After first joining Bank of America in New York and then moving to London, Thiago is now back in New York and is passionate about sharing guidance with the bank's summer interns. Our 2021 interns were part of one of our most diverse classes in history, with more than 1,800 teammates from around the globe. "It's incredibly rewarding to support our new teammates in the same way I was supported when I joined."

Delivering for our employees — 2021 highlights

In 2021, we continued supporting our employees and their families in new ways, and are deepening our investment in their overall wellbeing and career development.

Nearly 60K free virtual consults & 23K+ counseling calls

Teammates received nearly **60,000 free virtual consults** with physicians and behavioral health specialists and more than **23,000 confidential counseling calls**.

4.5M+ days of back-up care

We expanded our childcare reimbursement program and provided **more than 4.5 million days of back-up care**, supporting more than 23,000 U.S. teammates from March 2020 through June 2021.

Access to vaccinations

We hosted **on-site COVID-19 vaccine/ booster and flu vaccine clinics** and worked with experts to provide information on vaccination and booster effectiveness as well as health and safety protocols.

Flexible time off

U.S. teammates now have the option to **carry over up to five days of vacation** into the next year and **use up to five occasional illness days as personal days**. We also have provided time off for employees to be vaccinated.

$25 by 2025

We announced our **minimum hourly wage for U.S. employees would increase to $25 by 2025** and increased our current minimum pay to $21 in October.

$22M in tuition assistance

Employees received **$22 million in tuition assistance**, with 83% going to those pursuing degrees and 17% working toward certifications.

Managing medical expenses

Since 2012, we have **not increased medical premiums for employees earning less than $50,000**. We also provide preventive care medications at no cost for eligible U.S. teammates.

$500 wellness credit

We provide a **$500 credit toward medical plan premiums upon completion of annual wellness activities** ($1,000 if a covered spouse or partner also completes the wellness activities, which includes vaccinations for COVID-19).

Hiring 10K+ more from LMI communities

We hired 10,000 teammates from LMI neighborhoods two years ahead of our goal, and **committed to hiring an additional 10,000 by 2025**.

Developing managers

Nearly 90% of global managers have participated in our new, industry-leading Enterprise Manager Development Series.

Inclusion learning and development programs

Our voluntary inclusion learning and development programs logged **more than 139,000 completions**, reaching more than 78,000 teammates.

Our ongoing work to foster a diverse workforce and inclusive culture

We understand the role we play in influencing and driving progress around diversity, inclusion, racial equality and economic opportunity in financial services, the private sector and the communities where we live and work.

That's why we continue taking meaningful steps to drive diverse representation at all levels of the company and are building a culture where our employees feel comfortable being who they are and bringing their whole selves to work with equal access to opportunities regardless of their differences. It's the right thing to do, and we think it's good for business.

Our commitment starts at the top

Creating an inclusive environment starts at the top. Our Board of Directors, its committees and our CEO play a key role in the oversight of our culture, expecting management to be accountable for ethical and professional conduct and our commitment to being a great place to work. Our CEO and management team set the diversity and inclusion goals of the company. Each management team member has action-oriented diversity goals, which are subject to our quarterly business review process, talent planning and scorecards reviewed by the Board. Management team members cascade goals to support commitment and accountability across the company, and drive an inclusive work environment.

The Global Diversity & Inclusion Council (GDIC) promotes diversity goal setting, which is embedded in our performance management process and occurs at all levels of the organization. The GDIC consists of senior executives from every line of business, has been in place for over 20 years and has been chaired by our CEO since 2007. The Council sponsors and supports business, operating unit and regional diversity and inclusion councils to help align to enterprise diversity strategies and goals.

Our management team now includes individuals with an average of 21 years of service with the company and 31 years in financial services, with increased global and international expertise and the most diversity in our history. The management team is now 55% diverse, including seven women, two Black/African American, two Asian and one Hispanic-Latino leaders. At the end of 2021, our company remained one of only nine S&P 100 companies with six or more women on the Board.

We continue to exceed industry benchmarks for our diverse workforce and inclusive culture

Our workforce is 50% women and 49% people of color, reflecting the clients and communities we serve. We have worked hard to narrow the gaps at our leadership levels across the company. We hold ourselves accountable for increasing diverse representation by disclosing our employment metrics, measuring progress across top management levels, helping ensure managers are responsible for driving advancement on their teams, and building a robust pipeline of emerging talent through recruitment and partnerships at campuses across the world.

Our latest measures show improvement in the diversity of our leadership, management and global workforce, including:

50% of our **Board** is diverse,[1] including **38%** women.

55% of our **management team** is diverse,[1] including **32%** women.

50% of our **global workforce** are women and **49%** people of color.[2]

Since 2015, our representation of teammates of color in the **top three management levels** increased **+60%**.

People of color in **all management positions** increased to **41%** since 2015.

Since 2009, representation of people of color in our **Campus classes** increased **+47%**.

We've seen improvements in representation of Asian, Black/African American and Hispanic-Latino teammates across key categories such as management levels 1–3, managers, executive/senior level and mid-level.

[1] Includes women and people of color

[2] U.S. only

Note: CEO included in Board diversity stats

We are investing in an engaged workforce, where all teammates feel included

We have engaged in more than 350 courageous conversations and inclusion learning and development programs, reaching nearly all of our teammates in dialogues focused on topics central to who we are, including racial equality, economic opportunity, gender, sexual orientation, disability status, military service, mental health and more. Examples of our inclusion learning programs include:

- **Let's Get Real...®** courageous conversations on issues impacting our communities and how open dialogue can provide greater understanding and appreciation for one another
- **myD&I Development Program** focused on diversity and inclusion learning sessions created for individual contributors and employee network members
- **Inclusion Manager Series** focused on providing learning opportunities to equip managers to better address bias and drive inclusion deep within their teams
- **Diversity & Inclusion Pathways** focused on driving inclusion in the workplace and improving individual cultural competency
- **Executive development programs**, including our **Diverse Leader Sponsorship Program (DLSP)**, targeting diverse high-potential/top-performing leaders

We work with more than 200 external partners — including Year Up, OneTen, UnidosUS, Disability:IN, Catalyst, Paradigm for Parity and Lesbians Who Tech — and more than 350 colleges, universities and community colleges — including HBCUs, HSIs and tribal colleges — to identify diverse talent and expand our impact.

In addition, we focus on recruiting military and veterans, LGBTQ+ individuals and people with disabilities. For example, we:

- **Support military personnel and veterans** as they transition to civilian life, including by surpassing our goal of hiring over 10,000 military veterans over five years, with plans to maintain hiring momentum for the future
- **Attract and develop LGBTQ+ talent** through targeted partnerships with organizations such as Out & Equal Workplace Advocates, Out for Undergrad and Reaching Out
- **Employ a dedicated team focused on hiring people with cognitive and developmental disabilities**, including our Support Services team, made up of over 300 employees across multiple locations

Additionally, our Employee Networks and Diversity Leadership Councils continue to grow:

355
Employee Network chapters

230K
memberships worldwide

7
Diversity Leadership Councils

Employee Networks

- Asian Leadership Network
- Black Professional Group
- Disability Action Council
- Hispanic/Latino Organization for Leadership and Advancement
- Inter-Generational Employee Network
- Leadership, Education, Advocacy and Development for Women
- Lesbian, Gay, Bisexual, Transgender and Queer (LGBTQ+) Pride
- Military Support and Assistance Group
- Multicultural Leadership Network
- Native American Professional Network
- Parents and Caregivers Network

Diversity Leadership Councils

- Black/African American Executive Leadership Council
- Hispanic-Latino Leadership Council
- Asian Advisory Council
- Investing in Women Leadership Council
- LGBTQ+ Executive Leadership Council
- Disability Advisory Council
- Military Advisory Panel

Diversity representation across our workforce

Board diversity[1]	**50% diverse**	**38% women**
Management team diversity	**55% diverse**	**32% women**
Global workforce	**50% women**	**49% POC**[2]

Management levels 1–3	2015	2021	% change
Women	33%	42%	27%
People of color (POC)	15%	24%	60%
Asian	7%	8%	14%
Black / African American	4%	9%	125%
Hispanic / Latino	4%	6%	50%

Managers	2015	2021	% change
Women	42%	42%	0%
POC	32%	41%	28%
Asian	11%	13%	18%
Black / African American	8%	10%	25%
Hispanic / Latino	11%	16%	45%

EEO executive/senior level	2015	2021	% change
Women	32%	37%	16%
POC	15%	23%	53%
Asian	7%	10%	43%
Black / African American	4%	6%	50%
Hispanic / Latino	4%	5%	25%

EEO first/mid-level	2015	2021	% change
Women	49%	51%	4%
POC	33%	40%	21%
Asian	12%	12%	0%
Black / African American	9%	11%	22%
Hispanic / Latino	11%	15%	36%

Campus	2009	2021	% change
Women	32%	46%	44%
POC	36%	53%	47%
Asian	17%	24%	41%
Black / African American	9%	11%	22%
Hispanic / Latino	6%	15%	150%

[1] Includes women and people of color [2] U.S. only Note: CEO included in Board diversity stats

Employee engagement survey and turnover results

We have conducted an annual Employee Engagement Survey for nearly two decades. In 2021, 89% of teammates (nearly 182,000 teammates) participated, demonstrating our employees' willingness to give us feedback on how we are meeting their needs.

Since 2012, our Employee Engagement Index score has continued to trend upward, even during the global health crisis. Through our enterprise engagement survey, we also measure an internal Diversity & Inclusion Index[1] that gives us feedback on how we measure inclusion at the bank. Our D&I Index has a positive trend over time and exceeds industry benchmarks.

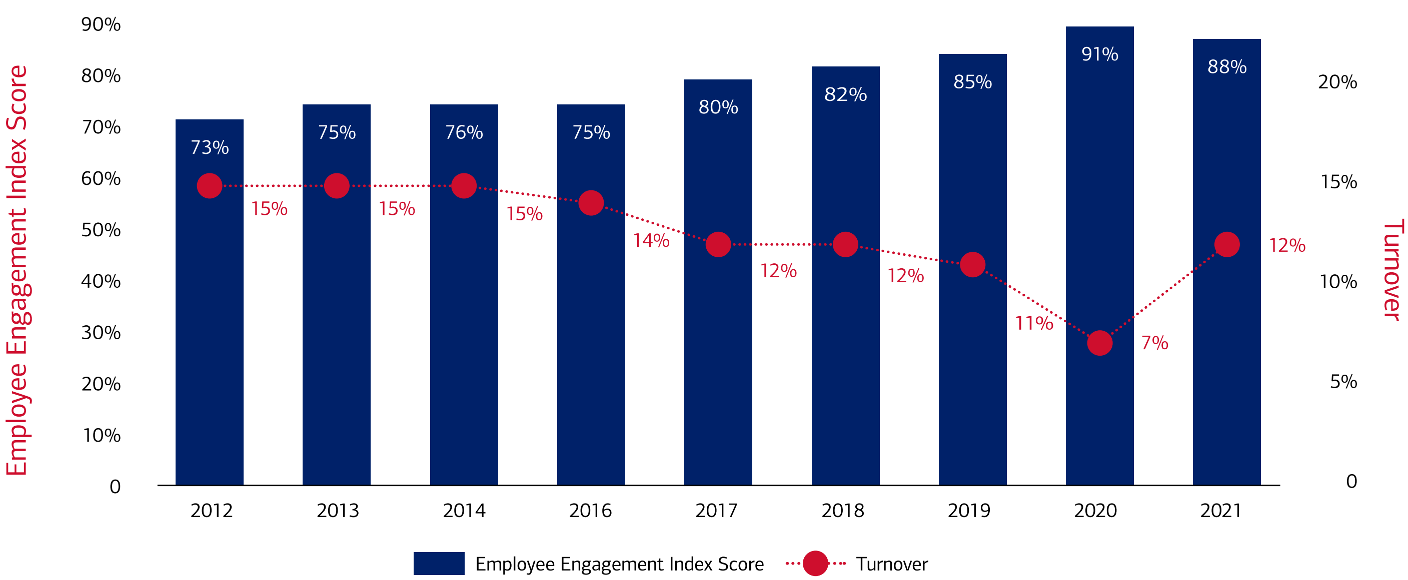
The results of the survey and the process of continuous improvement that ensues is discussed with the Board at least annually. Our efforts reflect our progress in being a great place to work.

We believe our employee turnover reflects the strength of our employee engagement results and how our teammates view the Bank as an employer of choice. Over the past decade, our turnover rate has decreased and has been among the lowest in the industry. Following a record low turnover rate of 7% in 2020 reflecting the pandemic environment, like many companies, our turnover did increase in 2021 as labor markets normalized. Even with that increase in 2021, we are seeing employee turnover at a similar rate as pre-pandemic record low levels of 11–12% turnover, a strong result for a company of our size and scale.

To help our teammates create long-term careers here, we continue to provide a variety of resources to help employees grow in their current roles and build new skills. We have also enhanced our internal mobility practices, which has led to over 50% of our open roles being filled by internal candidates.

	2019	2020	2021
Annual turnover	11%	7%	12%
Annual turnover % women	11%	6%	11%
Annual turnover % men	11%	7%	12%

Employee Engagement Survey and turnover results



[1] Our D&I Index measures core areas like how comfortable teammates feel sharing different opinions without fear of negative consequences, whether or not they feel they are being treated fairly, their impression of how well Bank of America has done in creating an environment where people of diverse backgrounds can succeed and how Bank of America values the unique experiences our teammates bring to the workplace.

Equal Employment Opportunity (EEO) diversity statistics

2021 EEO (by number of teammates)

U.S. EMPLOYEE DIVERSITY IN 2021

Job category	Gender	White	Black/ African American	Hispanic/ Latino	Asian	American Indian/ Alaska Native	Native Hawaiian/ Other Pacific Islander	Two or more races	Total by gender
Executive/Senior level officials and managers	Male	2,247	135	138	319	6		33	2,878
	Female	1,280	123	103	145	4	1	15	1,671
	Total	**3,527**	**258**	**241**	**464**	**10**	**1**	**48**	**4,549**
First/mid-level officials and managers	Male	6,157	832	1,386	1,492	27	36	189	10,119
	Female	6,279	1,374	1,771	1,013	43	34	202	10,716
	Total	**12,436**	**2,206**	**3,157**	**2,505**	**70**	**70**	**391**	**20,835**
Professionals	Male	25,731	2,679	3,109	7,015	107	89	757	39,487
	Female	14,062	2,845	2,173	4,782	89	71	484	24,506
	Total	**39,793**	**5,524**	**5,282**	**11,797**	**196**	**160**	**1,241**	**63,993**
Technicians	Male	649	252	212	595	7	8	31	1,754
	Female	276	149	79	634	2	1	18	1,159
	Total	**925**	**401**	**291**	**1,229**	**9**	**9**	**49**	**2,913**
Sales workers	Male	556	23	45	104	1		16	745
	Female	170	11	14	42		1	6	244
	Total	**726**	**34**	**59**	**146**	**1**	**1**	**22**	**989**
Administrative support	Male	8,729	3,727	6,845	1,716	87	92	690	21,886
	Female	18,837	10,757	14,804	4,067	206	215	1,381	50,267
	Total	**27,566**	**14,484**	**21,649**	**5,783**	**293**	**307**	**2,071**	**72,153**
Craft workers	Male	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Operatives	Male	59	75	25	40	0	0	4	203
	Female	26	41	25	15	1	0	1	109
	Total	**85**	**116**	**50**	**55**	**1**	**0**	**5**	**312**
Laborers & helpers	Male	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Service workers	Male	18	4	2	0	0	0	0	24
	Female	4	0	1	0	0	0	0	5
	Total	**22**	**4**	**3**	**0**	**0**	**0**	**0**	**29**
Total	Male	44,146	7,727	11,762	11,281	235	225	1,720	77,096
	Female	40,934	15,300	18,970	10,698	345	323	2,107	88,677
	Total	**85,080**	**23,027**	**30,732**	**21,979**	**580**	**548**	**3,827**	**165,773**

2021 EEO (by percentage of teammates)

U.S. EMPLOYEE DIVERSITY IN 2021

Job category	Gender	White	Black/ African American	Hispanic/ Latino	Asian	American Indian/ Alaska Native	Native Hawaiian/ Other Pacific Islander	Two or more races	Total by gender
Executive/Senior level officials and managers	Male	49.4%	3.0%	3.0%	7.0%	0.1%	0.0%	0.7%	63.3%
	Female	28.1%	2.7%	2.3%	3.2%	0.1%	0.0%	0.3%	36.7%
	Total	**77.5%**	**5.7%**	**5.3%**	**10.2%**	**0.2%**	**0.0%**	**1.1%**	
First/mid-level officials and managers	Male	29.6%	4.0%	6.7%	7.2%	0.1%	0.2%	0.9%	48.6%
	Female	30.1%	6.6%	8.5%	4.9%	0.2%	0.2%	1.0%	51.4%
	Total	**59.7%**	**10.6%**	**15.2%**	**12.0%**	**0.3%**	**0.3%**	**1.9%**	
Professionals	Male	40.2%	4.2%	4.9%	11.0%	0.2%	0.1%	1.2%	61.7%
	Female	22.0%	4.4%	3.4%	7.5%	0.1%	0.1%	0.8%	38.3%
	Total	**62.2%**	**8.6%**	**8.3%**	**18.4%**	**0.3%**	**0.3%**	**1.9%**	
Technicians	Male	22.3%	8.7%	7.3%	20.4%	0.2%	0.3%	1.1%	60.2%
	Female	9.5%	5.1%	2.7%	21.8%	0.1%	0.0%	0.6%	39.8%
	Total	**31.8%**	**13.8%**	**10.0%**	**42.2%**	**0.3%**	**0.3%**	**1.7%**	
Sales workers	Male	56.2%	2.3%	4.6%	10.5%	0.1%	0.0%	1.6%	75.3%
	Female	17.2%	1.1%	1.4%	4.2%	0.0%	0.1%	0.6%	24.7%
	Total	**73.4%**	**3.4%**	**6.0%**	**14.8%**	**0.1%**	**0.1%**	**2.2%**	
Administrative support	Male	12.1%	5.2%	9.5%	2.4%	0.1%	0.1%	1.0%	30.3%
	Female	26.1%	14.9%	20.5%	5.6%	0.3%	0.3%	1.9%	69.7%
	Total	**38.2%**	**20.1%**	**30.0%**	**8.0%**	**0.4%**	**0.4%**	**2.9%**	
Craft workers	Male	—	—	—	—	—	—	—	—
	Female	—	—	—	—	—	—	—	—
	Total	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Operatives	Male	18.9%	24.0%	8.0%	12.8%	0.0%	0.0%	1.3%	65.1%
	Female	8.3%	13.1%	8.0%	4.8%	0.3%	0.0%	0.3%	34.9%
	Total	**27.2%**	**37.2%**	**16.0%**	**17.6%**	**0.3%**	**0.0%**	**1.6%**	
Laborers & helpers	Male	—	—	—	—	—	—	—	—
	Female	—	—	—	—	—	—	—	—
	Total	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Service workers	Male	62.1%	13.8%	6.9%	0.0%	0.0%	0.0%	0.0%	82.8%
	Female	13.8%	0.0%	3.4%	0.0%	0.0%	0.0%	0.0%	17.2%
	Total	**75.9%**	**13.8%**	**10.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	
Total	Male	26.6%	4.7%	7.1%	6.8%	0.1%	0.1%	1.0%	46.5%
	Female	24.7%	9.2%	11.4%	6.5%	0.2%	0.2%	1.3%	53.5%
	Total	**51.3%**	**13.9%**	**18.5%**	**13.3%**	**0.3%**	**0.3%**	**2.3%**	

BANK OF AMERICA CORPORATION — FINANCIAL HIGHLIGHTS

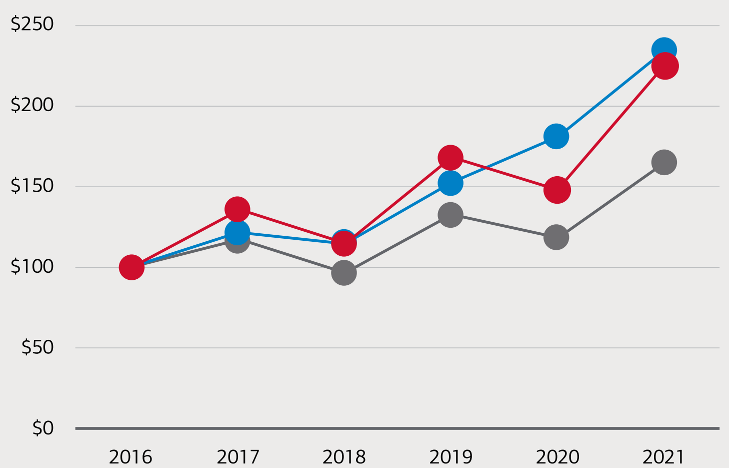
Bank of America Corporation (NYSE: BAC) is headquartered in Charlotte, North Carolina. As of December 31, 2021, we operated across the United States, its territories and more than 35 countries. Through our banking and various nonbank subsidiaries throughout the United States and in international markets, we provide a diversified range of banking and nonbank financial services and products through four business segments comprising eight lines of business: Consumer Banking (includes Retail and Preferred Banking), Global Wealth & Investment Management (includes Merrill and Private Bank), Global Banking (includes Business Banking, Commercial Banking and Global Corporate & Investment Banking) and Global Markets.

Financial highlights ($ in millions, except per share information)

For the year	**2021**	**2020**	**2019**
Revenue, net of interest expense	**$ 89,113**	$ 85,528	$ 91,244
Net income	**31,978**	17,894	27,430
Earnings per common share	**3.60**	1.88	2.77
Diluted earnings per common share	**3.57**	1.87	2.75
Dividends paid per common share	**0.78**	0.72	0.66
Return on average assets	**1.05%**	0.67%	1.14%
Return on average common equity	**12.23%**	6.76%	10.62%
Return on average tangible common shareholders' equity[1]	**17.02**	9.48	14.86
Efficiency ratio	**67.03**	64.55	60.17
Average diluted common shares issued and outstanding	**8,558**	8,797	9,443

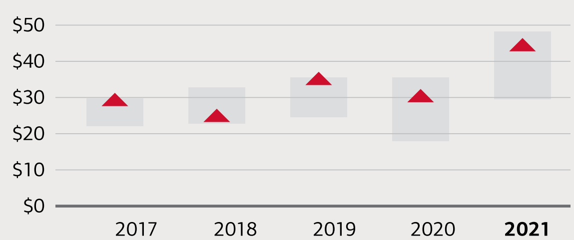
At year-end	**2021**	**2020**	**2019**
Total loans and leases	**$ 979,124**	$ 927,861	$ 983,426
Total assets	**3,169,495**	2,819,627	2,434,079
Total deposits	**2,064,446**	1,795,480	1,434,803
Total shareholders' equity	**270,066**	272,924	264,810
Book value per common share	**30.37**	28.72	27.32
Tangible book value per common share[1]	**21.68**	20.60	19.41
Market capitalization	**359,383**	262,206	311,209
Market price per common share	**44.49**	30.31	35.22
Common shares issued and outstanding	**8,078**	8,651	8,836
Tangible common equity ratio[1]	**5.7**	6.5	7.3

Total Cumulative Shareholder Return[2]



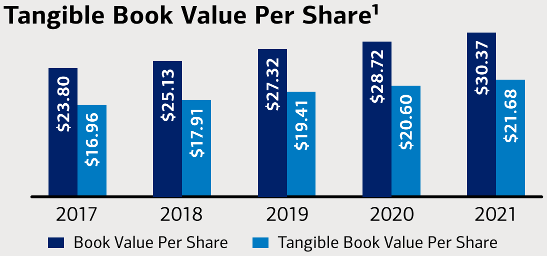
December 31	2016	2017	2018	2019	2020	**2021**
Bank of America Corporation	$100	$136	$115	$169	$149	**$223**
S&P 500	100	122	116	153	181	**233**
KBW Bank Sector Index	100	119	98	133	119	**165**

BAC Five-Year Stock Performance



	2017	2018	2019	2020	**2021**
HIGH	$29.88	$32.84	$35.52	$35.64	**$48.37**
LOW	22.05	22.73	24.56	18.08	**29.65**
▲ CLOSE	29.52	24.64	35.22	30.31	**44.49**

Book Value Per Share/ Tangible Book Value Per Share[1]



[1] Represents a non-GAAP financial measure. For more information on these measures and ratios, and a corresponding reconciliation to GAAP financial measures, see Supplemental Financial Data on page 70 and Non-GAAP Reconciliations on page 124 of the 2021 Financial Review section.

[2] This graph compares the yearly change in the Corporation's total cumulative shareholder return on its common stock with (i) the Standard & Poor's 500 Index and (ii) the KBW Bank Index for the years ended December 31, 2016 through 2021. The graph assumes an initial investment of $100 at the end of 2016 and the reinvestment of all dividends during the years indicated.

RECOGNITION

We are honored to be recognized by organizations and media around the world for our work, including our ESG commitments and initiatives and our efforts to be a great place to work.

In 2021, we were recognized by Fortune as one of their 100 Best Companies to Work For, Euromoney as the World's Best Bank for Corporate Responsibility and JUST Capital as one of their Most JUST Companies in America, among several others. Below are some of our most recent awards.[1]

Fortune
100 Best Companies to Work For (2021, 2020)

Best Big Companies to Work For (2021) *only financial services company recognized three years in a row*

75 Best Large Workplaces for Women (2021, 2020)

40 Best Large Workplaces in Financial Services and Insurance (2021, 2020)

100 Best Large Workplaces for Millennials (2021)

Change the World (2021) *named the top global bank three years in a row*

World's Most Admired Companies (2022, 2021, 2020) first ranking Megabank in 2022

Euromoney
World's Best Bank for Corporate Responsibility (2021, 2020)

World's Best Bank for Payments and Treasury (2021)

Excellence in Leadership — North America (2020)

Best Digital Bank — North America (2020)

Best Bank for Small and Medium-Sized Enterprises — North America (2021) *recognized for six consecutive years*

Best Bank for Corporate Responsibility — North America (2021)

Best Bank for Transaction Services — North America (2021, 2020)

Best Investment Bank — Germany, South Africa and Latin America (2021)

Best Advisory House — Latin America (2021)

Barron's
100 Most Sustainable Companies (2022, 2021, 2020)

Top 100 Women Advisors (2021) *recognized for 16 consecutive years*

America's Top 1,200 Financial Advisors (2021) *recognized for 13 consecutive years*

LinkedIn
50 Top Companies in the U.S. (2021) *second ranking financial institution in 2021*

Seramount (formerly Working Mother Media)
100 Best Companies (2021) *recognized for 33 consecutive years*

Best Companies for Multicultural Women (2021, 2020)

Best Companies for Dads (2021, 2020)

Top Companies for Executive Women (2021, 2020)

Inclusion Index (2021, 2020)

Top Wealth Advisor Moms (2021) *117 Merrill advisors recognized*

The Banker
Transaction Bank of the Year for North America (2021)

Transaction Bank of the Year for Supply Chain Finance (2021)

Most Valuable U.S. Banking Brand (2021)

Forbes
World's Best Employers (2021)

World's Top Female-Friendly Companies (2021)

America's Best Employers for Veterans (2021)

America's Best Large Employers (2021)

America's Best Employers for New Grads (2021)

America's Best Employers for Women (2021)

Top Women Wealth Advisors (2021) *224 Merrill advisors recognized*

Top Wealth Advisors (2021) *55 Merrill advisors recognized*

Corporate Responders (2020)

Bloomberg
Gender-Equality Index (2021, 2020)

Brandon Hall
30 Human Capital Management Excellence Awards (2021)

RateMyPlacement
100 Undergraduate Employers (2021, 2020)

PEOPLE Magazine
Companies that Care (2021, 2020)

JUST Capital
America's Most JUST Companies (2022, 2021, 2020)

JUST 100 (2022, 2021, 2020)

#1 Industry Leader — Banks (2022)

Top 100 U.S. Companies Supporting Healthy Families and Communities (2021)

Military Times
Best for Vets: Employers (2021, 2020)

UK Armed Forces Covenant
Employer Recognition Scheme Gold Award (2021) *recognized for six consecutive years*

Equileap
U.S. and Global Gender Equality Reports (2021)

Dave Thomas Foundation for Adoption
100 Best Adoption-Friendly Workplace (2021, 2020)

Disability:IN and the American Association of People with Disabilities
Disability Equality Index (2021, 2020) *scored 100%*

Named one of the best places for Disability Inclusion (2021, 2020)

FinanceAsia
Best International Investment Bank — India (2021)

Global Finance Magazine
Best Bank in the United States (2021, 2020)

Best Consumer Digital Bank in the United States (2021, 2020)

Outstanding Financial Innovator — Global (2021)

Global Leader in Social Bonds (2021)

Overall Leader for North America in Sustainable Finance (2021)

Most Innovative Private Bank (2021)

LATINA Style
Top 50 Best Companies for Latinas to Work For in the U.S. (2021) *recognized for 22 consecutive years*

Top 12 Companies (2021, 2020)

Top 15 Employee Resource Groups of the Year — Hispanic/Latino Organization for Leadership & Advancement (2021)

Company of the Year (2020)

PR News
Platinum PR Award for Employee Relations (2021)

CDP
Supplier Engagement Leaderboard (2020)

Hispanic Information Technology Executive Council (HITEC)
Corporation of the Year (2021)

Out & Equal
Belonging & Equity Visionary Award (2021)

The Times
Top 50 Employers for Women in the U.K. (2021)

Teladoc Health
Resilience Through Adversity award (2021)

Human Rights Campaign
Corporate Equality Index (2022, 2021) *scored 100%*

Named one of the Best Places to Work for LGBTQ+ Equality (2022, 2021)

Great Place to Work
Best Workplaces for Parents (2021) *recognized for five consecutive years*

J.D. Power
Ranked #1 in U.S. Merchant Services Satisfaction (2022)

Ranked #1 in U.S. Online Banking and U.S. Banking Mobile App Satisfaction (2021)

Ranked #1 in U.S. Retail Banking Advice Satisfaction (2021)

Certified Customer Service — Phone — Retirement & Benefits contact center (2021) *recognized for 17 consecutive years*

Certified Customer Service — Phone — Corporate, Global Commercial and Business Banking contact centers (2021) *recognized for 12 consecutive years*

[1]The recognitions referenced above represent awards given to various affiliates of Bank of America. Specific details around those awards can be provided by visiting the websites of the companies that provided the awards or by visiting newsroom.bankofamerica.com/awards for further detail.

STAKEHOLDER CAPITALISM METRICS

This index includes our disclosures using the Stakeholder Capitalism Metrics developed by the International Business Council (IBC) of the World Economic Forum, as well as the Sustainability Accounting Standards Board (SASB) and the United Nations Global Compact (UNGC) reporting frameworks. We believe this disclosure helps to demonstrate how our sustainable business model drives progress towards inclusive capitalism and the U.N.'s Sustainable Development Goals. In this index, we either reference existing disclosures or respond directly. We evaluate and select the metrics we believe are most relevant to our business model and we expect our disclosures to evolve over time. All reported data is as of or for year-end December 31, 2021, unless otherwise noted. See page 62 for Cautionary Information and Forward-Looking Statements regarding Stakeholder Capitalism Metrics.

INDICATES CORE METRIC

Principles of Governance

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Governing Purpose	**Setting Purpose:** The company's stated purpose, as the expression of the means by which a business proposes solutions to economic, environmental, and social issues. Corporate purpose should create value for all stakeholders, including shareholders. **Purpose-led management:** How the company's stated purpose is embedded in company strategies, policies, and goals.	How we operate to drive Responsible Growth, as articulated in this 2021 Annual Report, and our 2022 Proxy Statement details how our environmental, social, and governance leadership create stakeholder value. **IBC**
	Description of proxy voting and investee engagement policies and procedures	Merrill Lynch and Merrill Private Wealth Management clients enrolled in our investment advisory programs directly determine how to vote their proxies. Through our investment advisory agreement, clients may delegate proxy voting authority directly to institutional shareholder services (ISS) or elect to vote proxies themselves. As part of delegating to ISS, clients may, at their discretion, choose among the ISS Benchmark, ISS Socially Responsible Investing, and ISS Catholic proxy voting guidelines. Managed Account Advisors (MAA) and Merrill Lynch, Pierce, Fenner & Smith (MLPF&S) perform due diligence on ISS to determine that it has the capacity and competency to adequately analyze proxy issues and can make such voting recommendations in an impartial manner and in the best interests of clients. For matters over which ISS has a conflict or is otherwise unable to vote (called Specified investments), the proxy committee of MAA or MLPF&S, as applicable, will have the authority to vote proxies in accordance with its proxy voting policies and procedures. MAA or MLPF&S does not assume proxy voting authority for securities except with respect to Specified Investments. For proxies neither covered by ISS nor included as Specified Investments, the client will retain the right to vote those proxies. Generally, Bank of America Private Bank clients delegate authority to the Private Bank to vote proxies on their behalf. The Private Bank has a fiduciary-focused proxy voting policy and custom guidelines and employs Glass Lewis to execute the votes. For investment management accounts where Private Bank is not the trustee or other named fiduciary, clients may delegate proxy authority directly to Glass Lewis (or other proxy advisor as determined by Private Bank) via their investment advisory agreement, as described above. Clients may also withhold this delegation and vote themselves if they choose to do so. **SASB: FN-AC-410a.3**
Quality of Governing Body	**Governing Body Composition:** Composition of the highest governance body and its committees by: competencies relating to economic, environmental, and social topics; executive or non-executive; independence; tenure on the governance body; number of each individual's other significant positions and commitments, and the nature of the commitments; gender; membership of under-represented social groups; stakeholder representation.	Refer to the section entitled "Proposal 1: Electing directors" in our 2022 Proxy Statement on the Bank of America Investor Relations page available at www.bankofamerica.com/investor. **IBC**
	Progress against strategic milestones: Disclosure of the material strategic economic, environmental, and social milestones expected to be achieved in the following year, such milestones achieved from the previous year, and how those milestones are expected to or have contributed to long-term value.	Refer to our 2020 ESG Performance Data Summary available at www.bankofamerica.com/ESGData2020 for details on our Sustainable Finance commitment, operational environmental performance and other goals. In 2021, we committed \$450 million against our incremental \$1.25 billion commitment to racial equality and economic opportunity including jobs, affordable housing, small business success and health. We also increased our Community Homeownership Commitment in 2021 — threefold — to \$15 billion by 2025, aiming to help 60,000 low- and moderate-income (LMI) people purchase a home. And we have issued two, \$2 billion Equality Progress Sustainability Bonds, the use of proceeds from which are designed to advance racial and gender equality, economic opportunity and environmental sustainability. **IBC**

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Quality of Governing Body (continued)	**Remuneration:** **1.** How performance criteria in the remuneration policies relate to the highest governance body's and senior executives' objectives for economic, environmental and social topics, as connected to the company's stated purpose, strategy, and long-term value. **2.** Remuneration policies for the highest governance body and senior executives for the following types of remuneration: fixed pay and variable pay, including performance-based pay, equity-based pay, bonuses, and deferred or vested shares, sign-on bonuses or recruitment incentive payments, termination payments, clawback and retirement benefits.	Refer to the Compensation Discussion and Analysis section in our 2022 Proxy Statement available on the Bank of America Investor Relations website at www.bankofamerica.com/investor. **IBC**
Ethical Behavior	**Anti-corruption:** **1.** Total percentage of governance body members, employees and business partners who have received training on the organization's anti-corruption policies and procedures, broken down by region. **2.** (a) Total number and nature of incidents of corruption confirmed during the current year but related to previous years, and (b) Total number and nature of incidents of corruption confirmed during the current year, related to this year. **3.** Discussion of initiatives and stakeholder engagement to improve the broader operating environment and culture, in order to combat corruption.	1. 100% of Bank of America employees are required to take training on anti-bribery and anti-corruption policies as part of Bank of America's Code of Conduct training. 2. For disclosure of significant litigation and regulatory matters, see Note 12 — Commitments and Contingencies, starting on pages 173–177 of the 2021 Financial Review. 3. Refer to our *Code of Conduct* on www.bankofamerica.com/investor. **IBC**
	Protected ethics advice and reporting mechanisms: A description of internal and external mechanisms for: **1.** Seeking advice about ethical and lawful behaviour and organizational integrity **2.** Reporting concerns about unethical or unlawful behaviour and organizational integrity **SASB:** Description of approach to ensuring professional integrity, including duty of care	Refer to our Code of Conduct on www.bankofamerica.com/investor. Refer to our Code of Conduct for further details on professional integrity. Additionally, refer to the *Our Company* section of the Corporation's website, in particular the *Responsible Growth* and *Our Business Practices* sections. **IBC** **SASB: FN-I B -510b.4**
	Monetary losses from unethical behaviour: Total amount of monetary losses as a result of legal proceedings associated with: fraud, insider trading, anti-trust, anti-competitive behaviour, market manipulation, malpractice, or violations of other related industry laws or regulations.	For disclosure of significant litigation and regulatory matters and material legal proceedings, see Note 12 — Commitments and Contingencies on pages 173–177 of the 2021 Financial Review section of this Annual Report. **IBC**
	Alignment of strategy and policies to lobbying: The significant issues that are the focus of the company's participation in public policy development and lobbying; the company's strategy relevant to these areas of focus; and any differences between its lobbying positions, purpose, and any stated policies, goals, or other public positions.	Refer to our Political Activities disclosure available on the Bank of America Investor Relations website at: https://investor.bankofamerica.com/corporate-governance/governance-library/political-activities and our Environmental and Social Risk Framework Policy available at: www.bankofamerica.com/ESRPF **IBC**
	Description of whistleblower policies and procedures	Page 13 of our Code of Conduct outlines policies and procedures related to reporting ethical misconduct. **SASB: FN-CB-510A. 2, FN-IB-510A. 2, FN-AC-510A. 2**
Customer Treatment	**Transparent Information & Fair Advice for Customers:** Description of approach to informing customers about products and services	Refer to the *What We Offer* page within the *Our Company* section of www.bankofamerica.com for the Corporation's approach to serving its clients. In addition, see the link to *What Can an Advisor Do for Me?* page that outlines our approach to serving clients in our Global Wealth & Investment Management business. This website includes links to important legal disclosures available to our clients as well as fee schedules for products offered. Further, refer to our Business Standards Report, which outlines our focus on making financial lives better and how, since the financial crisis, our company is more straightforward, less risky, and built on a stronger foundation that lives up to our purpose. **SASB: FN-AC-270a.3**
Risk and Opportunity Oversight	**Integrating risk and opportunity into business process:** Company risk factor and opportunity disclosures that clearly identify the principal material risks and opportunities facing the company specifically (as opposed to generic sector risks), the company appetite in respect of these risks, how these risks and opportunities have moved over time and the response to those changes. These opportunities and risks should integrate material economic, environmental, and social issues, including climate change and data stewardship.	Refer to the Bank of America Environmental and Social Risk Policy Framework available at www.bankofamerica.com/ESRPF. Also, refer to the Managing Risk section of the MD&A starting on page 85 within the 2021 Financial Review section of this Annual Report. **IBC**
Data Security	Description of approach to identifying and addressing data security risks	Refer to Information Security and Privacy Policies found on the Governance page of our corporate website and the Compliance and Operational Risk Management section on pages 119–120 of the 2021 Financial Review for detail on our approach to data security risks. Also, refer to the Managing Risk section of the MD&A starting on page 85 within the 2021 Financial Review section of this Annual Report. **SASB: FN-CB-230a.2; FN-CF-230a.3**

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Systemic Risk Management	Global Systemically Important Bank (G-SIB) score, by category	Refer to the Regulatory Capital subsection on page 89 of the 2021 Financial Review for our G-SIB buffer and further detail. Additionally, refer to our Banking Organization Systematic Risk Report FR Y-15 filing for further information that factors into our calculation. **SASB: FN-CB-550a.1; FN-IB-550a.1**
	Description of approach to incorporation of results of mandatory and voluntary stress tests into capital adequacy planning, long-term corporate strategy, and other business activities	We conduct various scenario analyses, included as part of the Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Tests, as well as our resolution and recovery planning. For more information, see the Capital Management section on pages 88–93 of the 2021 Financial Review. **SASB: FN-CB-550a.2; FN-IB-550a.2**
Stakeholder Engagement	**Material issues impacting stakeholders:** A list of the topics that are material to key stakeholders and the company, how the topics were identified, and how the stakeholders were engaged.	Refer to our ESG Materiality disclosure available at www.bankofamerica.com/ESGMateriality. **IBC**
Incorporation of Environmental, Social, and Governance Factors in Credit Analysis	Commercial and industrial credit exposure, by industry	Refer to the Industry Concentrations subsection on pages 108–109 of the 2021 Financial Review for further details. **SASB: FN-CB-410a.1**
	Description of approach to incorporation of environmental, social, and governance (ESG) factors in credit analysis, in investment banking and brokerage activities, and in wealth management processes and strategies	Refer to the Bank of America Corporation Environmental and Social Risk Policy Framework at www.bankofamerica.com/ESRPF for details on our approach to incorporating ESG factors into our risk management activities. **SASB: FN-CB-410a.2; FN-IB-410a.3; FN-AC-410a.2**
	(1) Number and (2) total value of investments and loans incorporating integration of environmental, social, and governance (ESG) factors, by industry	In 2021, we launched a $1.5 trillion Sustainable Finance commitment to finance the transition to a low-carbon economy, which stimulates wealth creation at our clients and provides more capital to the economy. Refer to the 2021 Annual Report ESG Highlights for more information. **SASB: FN-IB-410a.2**
	Amount of assets under management, by asset class, that employ (1) integration of environmental, social, and governance (ESG) issues, (2) sustainability-themed investing, and (3) screening	As of December 31, 2021, Bank of America had $55.6 billion of client balances in Sustainable & Impact Investments which we define as investment strategies that intentionally integrate environmental, social or governance factors in order to avoid harm by reducing negative social or environmental effects or managing risk by limiting certain exposures, benefit stakeholders by supporting positive social or environmental practices, or contribute to solutions that address specific and measurable sustainability outcomes or impact. **SASB: FN-AC-410a.1**
Customer Privacy	Number of account holders whose information is used for secondary purposes	Bank of America is committed to collecting, using and sharing personal information responsibly. Refer to www.bankofamerica.com/privacy for detail on how we process personal information and choices customers have to control the use and sharing of their personal information. **SASB: FN-CF-220a.1**

Planet*

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Climate Change	**Greenhouse Gas (GHG) emissions:** For all relevant greenhouse gases (e.g., carbon dioxide, methane, nitrous oxide, F-gases etc.), report in metric tonnes of carbon dioxide equivalent (tCO_2e) GHG Protocol Scope 1 and Scope 2 emissions. Estimate and report material upstream and downstream (GHG Protocol Scope 3) emissions where appropriate.	Bank of America's 2020 greenhouse gas emissions (tCO_2e) are as follows. Since 2010, we have reduced location-based emissions 60% globally. For more information, refer to our ESG Performance Data Summary (2020) available at www.bankofamerica.com/ESGData2020. • Scope 1: 53,390 • Location-based Scope 2: 657,635 • Market-Based Scope 2: 7,685 • Total net Scope 1 and Market-Based Scope 2: 0 • Scope 3 Purchased Goods and Services: 1,573,430 • Scope 3 Capital Goods: 74,283 • Scope 3 Fuel- and Energy-Related Activities: 134,786 • Scope 3 Upstream Transportation and Distribution: 116,149 • Scope 3 Waste (Traditional Disposal): 15,850 • Scope 3 Business Travel: 31,482 • Scope 3 Net Business Travel: 0 • Scope 3 Employee Commuting: 126,415 • Scope 3 Downstream Transportation and Distribution: 1,200,000 • Scope 3 Use of Sold Products: 4,000 • Scope 3 End of Life Treatment of Sold Products: 15,000 **IBC**

*2021 Environmental Data will be published in Q2 2022.

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Climate Change (continued)	**TCFD implementation:** Fully implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). If necessary, disclose a timeline of at most three years for full implementation. Disclose whether you have set, or have committed to set GHG emissions targets that are in line with the goals of the Paris Agreement—to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C—and to achieve net-zero emissions before 2050.	In 2020, Bank of America released its Task Force on Climate-related Financial Disclosures (TCFD) Report available at www.bankofamerica.com/TCFD. In early 2021, Bank of America took the next step in our climate journey by publicly committing to achieve net-zero greenhouse gas emissions before 2050 across our operations, supply chain, and financing activities. We will issue a new TCFD Report in 2022 with updates on progress toward our Net Zero commitment. For more information, refer to www.bankofamerica.com/NetZero. **IBC**
	Paris-aligned GHG emissions targets: Define and report progress against time-bound, science-based GHG emissions targets that are in line with the goals of the Paris Agreement—to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C. This should include defining a date before 2050 by which you will achieve net-zero greenhouse gas emissions and interim reduction targets based on the methodologies provided by the Science Based Targets initiative if applicable.	To reach the goals of the Paris Agreement, we are developing a strategy across our entire value chain which includes setting interim emission reduction targets aligned with science, engaging with clients on their climate plans and supporting climate innovation. Our net-zero goal includes operations (Scope 1 and 2), supply chain (Scope 3 upstream emissions) and all material emissions attributed to financing activities (Scope 3 investments). For more information, refer to www.bankofamerica.com/NetZero and https://about.bankofamerica.com/en/making-an-impact/net-zero-carbon-emissions-by-2050. **IBC**
	Impact of Greenhouse gas emissions: Report wherever material along the value chain (GHG protocol scopes 1, 2 & 3), the valued societal impact of greenhouse gas emissions. Disclose the estimate of the social/societal cost of carbon used and the source or basis for this estimate.	The societal impact of Bank of America's Scope 1, Scope 2 (location-based), and Scope 3 (Categories 1–7, 9, 11–12) emissions in 2020 was estimated to be $204 million. This figure was calculated using the EPA's 2020 social cost of carbon of $51/metric ton CO_2 (3% discount rate, reported in 2020 USD). **IBC**
	Businesses should support a precautionary approach to environmental challenges. Businesses should undertake initiatives to promote greater environmental responsibility. Businesses should encourage the development and diffusion of environmentally friendly technologies.	Bank of America is committed to helping lead the transition to a more just, sustainable global economy. As part of our support for the United Nations (UN) Sustainable Development Goals (SDGs), we develop innovative investments that put global capital to work on critical environmental problems, by supporting prosperity in the communities we serve, and by being a more sustainable company in everything. The two main pillars of our business are: 1. Environmental Transition: addressing climate change and promoting the circular economy, including solutions for renewable energy, energy efficiency, clean transportation, water & sanitation, sustainable agriculture, and carbon capture & sequestration 2. Inclusive Development: advancing community development, affordable housing, healthcare, education, financial and digital inclusion, access to basic services, racial and gender equality, and promoting environmental justice Read more at: https://about.bankofamerica.com/en/making-an-impact/sustainable-finance, and see the following reports: *Making an Impact*; *Environmental Sustainability ESG Performance Data Summary 2020*, Env. Operations Data pgs 14–21 and Env. Business by LOB pg. 2 2021 CDP and 2019 TCFD on www.bankofamerica.com/ESGreports **UNGC Principles 7, 8 & 9**
Fresh Water Availability	**Water consumption and withdrawal in water-stressed areas:** Report for operations where material, mega litres of water withdrawn, mega litres of water consumed and the percentage of each in regions with high or extremely high baseline water stress according to WRI Aqueduct Water Risk Atlas tool. Estimate and report the same information for the full value chain (upstream and downstream) where appropriate.	In 2020, Bank of America withdrew 6,688 and consumed 1,492 mega litres of water across our global operations. Withdrawals include all of the water we use per year, including some reclaimed water. Water consumption is defined as the water we use for irrigation. 40% of our withdrawals and 42% of our consumption were from regions with high or extremely high baseline water stress according to the WRI Aqueduct Water Risk Atlas tool. **IBC**
Nature Loss	**Land use and ecological sensitivity:** Report the number and area (in hectares) of sites owned, leased or managed in or adjacent to protected areas and/or key biodiversity areas (KBA).	In 2020, Bank of America had 9 active U.S. sites that intersected with areas protected for biodiversity. The area of these buildings is approximately 7,000 square meters. Only U.S. sites are included in this analysis; U.S. sites make up over 90% of Bank of America's real estate footprint. Sites were overlaid on the U.S. Geological Survey's Protected Areas Database (PADUS) to understand intersection with protected areas. **IBC**
Air Pollution	**Air pollution:** Report wherever material along the value chain: nitrogen oxides (NO_x), sulphur oxides (SO_x), particulate matter and other significant air emissions. Wherever possible, estimate the proportion of specified emissions that occur in or adjacent to urban/densely populated areas.	Bank of America's 2020 air pollution emissions (metric tons) are as follows. These air pollution emissions are from all of our sites globally and are not specific to urban/densely populated areas. For more information, refer to our ESG Performance Data Summary (2020) available at www.bankofamerica.com/ESGData2020. • SO_x: 1 • NO_x: 19 • CO: 27 • VOC: 2 • Particulate Matter: 3 **IBC**

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Air Pollution (continued)	**Impact of air pollution:** Report wherever material along the value chain, the valued impact of air pollution, including nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matter and other significant air emissions	The valued impact of Bank of America's air pollution (SO_x, NO_x, CO, VOCs, and PM) in 2020 was estimated to be $135,000. This figure was calculated using the social cost factors of each pollutant as reported in the World Resources Institute's Transport Emissions & Social Cost Assessment (TESCA) Tool v1.0. These social cost factors are weighted averages based on a meta-analysis of international academic studies. **IBC**
Environmental Risk to Mortgaged Properties	(1) Number and (2) value of mortgage loans in 100-year flood zones	As of December 31, 2021, the Corporation had 42,957 loans with a book value of $11.7 billion in 100-year flood zones according to the Federal Emergency Management Agency (FEMA) definition. **SASB: FN-MF-450a.1**
	(1) Total expected loss and (2) Loss Given Default (LGD) attributable to mortgage loan default and delinquency due to weather-related natural catastrophes, by geographic region	The Corporation utilizes a vendor model to help estimate the frequency and consequence of natural events, but currently does not have a process in place to estimate losses specific to natural catastrophes. We have monitored natural disasters in the last few years and given our robust insurance requirements, client selection process and portfolio asset quality (borrower's equity), we have experienced no material losses. We understand this may change based on severity and location of future events. Refer to the Climate Risk Management section on pages 120–121 of the 2021 Financial Review for further details. See the Physical Risk and Stress Testing sections of our Task Force on Climate-related Financial Disclosures (TCFD) report for details on scenario analysis and stress testing related to the potential impact of climate-related natural hazards on our mortgage portfolio. **SASB: FN-MF-450a.2**
	Description of how climate change and other environmental risks are incorporated into mortgage origination and underwriting	Recognizing that certain sectors are more sensitive to climate-related and environmental risks, we undertake enhanced due diligence to analyze lending activities in these sectors to evaluate the associated credit risks. Evaluation of environmental matters may include land and water use impacts, a remediation/reclamation track record (if applicable), climate risk reporting, community and stakeholder engagement and overall transparency. For acute physical risks, which are extreme weather events such as cyclones, hurricanes, or floods, the Corporation follows Federal flood insurance regulations and the industry's mortgage hazard insurance (including fire/wind coverage) during underwriting. Flood insurance requirements are based on flood zones determined by the FEMA. Insurance coverage amounts require replacement value of property with policy parameters following industry standards for minimum/maximum. **SASB: FN-MF-450a.3**

Prosperity

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Employment and Wealth Generation	**Absolute number and rate of employment:** **1.** Total number and rate of new employee hires during the reporting period, by age group, gender, other indicators of diversity and region **2.** Total number and rate of employee turnover during the reporting period, by age group, gender, other indicators of diversity and region	In 2021, turnover returned to pre-pandemic levels. While external research has found that women are leaving the workforce at a higher rate than men, Bank of America continues to have a lower turnover rate for women than men.

External Hires

Diversity		Region	
Female	48%	U.S.	68%
POC	60%	APAC	28%
Black/ African American	20%	EMEA	3%
Hispanic/Latino	22%	LATAM	1%
		Canada	0%

Turnover

Diversity		Region	
Female	11%	U.S.	12%
POC	13%	APAC	10%
Black/ African American	12%	EMEA	9%
Hispanic/Latino	14%	LATAM	8%
Annualized	12%	Canada	9%

IBC

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Employment and Wealth Generation (continued)	**Economic Contribution:** **1.** Direct economic value generated and distributed (EVG&D) — on an accrual basis, covering the basic components for the organization's global operations, ideally split out by: a. Revenue b. Operating Costs c. Employee wages and benefits d. Payments to providers of capital e. Payments to government f. Community Investment **2.** Financial assistance received from the government — Total monetary value of financial assistance received by the organization from any government during the reporting period	1a–d. Refer to Financial Statements and Notes beginning on page 125 of the 2021 Financial Review section. 1e. Refer to Total Tax Paid metric. 1f. 2021 total philanthropic giving was $370M. 2. No financial assistance received from the government; the company does not consider income tax credits to be applicable. See the company's response for the Total Tax Paid metric for more information. **IBC**
Wealth Creation and Employment	**Financial investment contribution disclosure:** **1.** Total capital expenditures (CapEx) minus depreciation supported by narrative to describe the company's investment strategy **2.** Share buybacks plus dividend payments supported by narrative to describe the company's strategy for returns of capital to shareholders	1. While capital expenditures (CapEx) are one way of measuring a company's investments and their impact on driving growth in the economy, it is not the only way to measure capital investment in the greater economy. For example, in 2021 we launched a $1.5 trillion Sustainable Finance commitment to finance the transition to a low-carbon economy which stimulates wealth creation for our clients and provides more capital to the economy. Refer to the 2021 Annual Report ESG Highlights for more information. Additionally, we continue to invest in projects to achieve LEED certification throughout our footprint, as well as expansion, incorporation of solar energy and modernization of our financial center network. Sustainable investments also include the transition to an electric vehicle fleet. 2. For more information outlining our return of capital to shareholders, see Note 13 — Shareholders' Equity on page 177 of the 2021 Financial Review section. **IBC**
Community and Social Vitality	**Total tax paid:** The total global tax borne by the company, including corporate income taxes, property taxes, non-creditable VAT and other sales taxes, employer-paid payroll taxes and other taxes that constitute costs to the company, by category of taxes	The following table reflects the approximate amount of each category of tax borne by the company globally. U.S. income tax law provides investors in affordable housing projects, renewable energy projects and other activities that further ESG principles with credits that can reduce income taxes otherwise owed. These investments generally involve substantial pre-tax losses. The amount shown in the table for Corporate Income Taxes paid would have been approximately $3.5 billion higher were it not for these credits.

Global Tax Paid in 2021 ($ in billions)	
Corporate Income Taxes	2.8
Property Taxes	0.1
Non-creditable VAT and Other Sales Taxes	0.5
Employer-paid Payroll Taxes	1.8
Other Taxes	0.9
Total	**6.1**

IBC

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Innovation in Better Products and Services	**Total R&D expenses ($):** Total costs related to research and development Innovation is key to prosperity and total costs relating to R&D can be regarded as a basic indication of a company's efforts to innovate new products and services and be fit for the future. This can also provide insights into the capacity of the company to create new offerings, generate social or environmental benefits and more detailed specific disclosure could demonstrate progress against the SDGs.	While R&D expenses are indicative of a company's investment in innovation and producing better products and services for their clients, it is not the only way to measure a company's efforts to innovate new products and services and to be fit for the future. For example, in 2021 we launched a $1.5 trillion Sustainable Finance commitment to finance the transition to a low-carbon economy. Refer to the 2021 Annual Report ESG Highlights for more information. **IBC**
Financial Inclusion	(1) Number and (2) amount of loans outstanding qualified to programs designed to promote small business and community development	We extended over $11.5 billion in LMI loans to small businesses in 2021. Refer to page 8 of our 2020 Environmental, Social, and Governance Performance Data Summary for more information on small business and community support at www.bankofamerica.com/ESGData 2020. **SASB: FN-CB-240a.1**
	Number of no-cost retail checking accounts provided to previously unbanked or underbanked customers	As of year-end 2021, we have 3.2 million accounts in the SafeBalance banking program. SafeBalance, a no overdraft fee account, is a low-cost deposit service provided to our customers and Bank On certified since 2017. Students under age 25 are eligible for a waiver of the monthly maintenance fee. **SASB: FN-CB-240a.3**

People

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Financial Inclusion (continued)	Number of participants in financial literacy initiatives for unbanked, underbanked, or underserved customers	We provide financial literacy to all of our customers through the Better Money Habits financial education platform. Better Money Habits is a resource that helps individuals and families build know-how on topics ranging from budgeting and saving to home ownership and retirement — designed for the way people want to learn today. In 2021, this site was accessed more 7.6 million times. **SASB: FN-CB-240a.4**
Dignity and Equality	**Diversity and inclusion (%):** Percentage of employees per employee category, per age group, gender and other indicators of diversity (e.g., ethnicity). Percentage of gender and racial/ethnic group representation for (1) executive management, (2) non-executive management, (3) professionals, and (4) all other employees	Refer to the Human Capital Management section of this Annual Report. **IBC** **SASB: FN-I B -330A. 1, FN-AC-330A. 1**
	Pay equality: Ratio of the basic salary and remuneration for each employee category by significant locations of operation for priority areas of equality: women to men; minor to major ethnic groups; and other relevant equality areas SASB: Percentage of total remuneration that is variable for Material Risk Takers (MRTs); Percentage of variable remuneration of Material Risk Takers (MRTs) to which malus or clawback provisions were applied; Discussion of policies around supervision, control, and validation of traders' pricing of Level 3 assets and liabilities	Refer to the Equal Pay for Equal Work Section in our 2022 Proxy Statement available on the Bank of America Investor Relations website at www.bankofamerica.com/investor. We conduct rigorous analysis with outside experts to examine individual employee pay before year-end compensation decisions are finalized adjusting compensation where appropriate. The results of our equal pay for equal work review are disclosed in the Proxy Statement. Our analysis focuses on total compensation and includes geographies where we have significant operations for women and covers the U.S. for people of color. SASB answers: Variable incentive remuneration awards (both annual and deferred) are subject to distinct features that can result in the awards being canceled or prior payments being clawed back in the event of certain detrimental conduct or financial losses. We believe these features encourage appropriate behavior and manage risk in our compensation program. For individual Material Risk Takers in the Investment Bank & Brokerage sector, 100% of deferred variable compensation is subject to clawback. For compensation related to 2021, approximately 80% of total remuneration was variable, of which 69% was deferred and therefore subject to clawback. Refer to the Complex Accounting Estimates section on pages 121–123 and Notes 1 and 20 of the 2021 Financial Review pages 133–141 and 189–198. **IBC** **SASB: FN-IB -550b.1, FN-I B -550b.2, FN-I B -550b.3**
	Wage level (%): **1.** Ratios of standard entry-level wage by gender compared to local minimum wage **2.** Ratio of CEO's total annual compensation to median total annual compensation of all employees (excluding the CEO)	1. We are an industry leader in establishing an internal minimum rate of pay above all mandated minimums for our U.S. hourly teammates, and have made regular increases over the past several years. Our minimum hourly wage for U.S. teammates was raised to $21 in 2021, building toward $25 per hour by 2025. We compare our average U.S. hourly pay and benefits to living wage standards utilizing MIT's Living Wage Calculator. The Living Wage calculator is a market-based approach that measures the basic needs of a family including items such as food, childcare, health insurance and housing costs. We are above the living wage for a family of four in all of our U.S. markets when we consider our average hourly pay plus benefits in alignment with the living wage definition. 2. Refer to the section entitled "CEO pay ratio" in our 2022 Proxy Statement on the Bank of America Investor Relations website available at www.bankofamerica.com/investor. **IBC**
	Risk for incidents of child, forced or compulsory labor: An explanation of the operations and suppliers considered to have significant risk for incidents of child labor, forced or compulsory labor. Such risks could emerge in relation to type of operation (such as manufacturing plant) and type of supplier; or countries or geographic areas with operations and suppliers considered at risk.	Refer to our Modern Slavery Act Statement, available at www.bankofamerica.com/ModernSlaveryAct, which is updated annually. **IBC** **UNGC Principles 4 & 5**
	Freedom of Association and Collective Bargaining at Risk (%): **1.** Percentage of active workforce covered under collective bargaining agreements **2.** An explanation of the assessment performed on suppliers for which the right to freedom of association and collective bargaining is at risk including measures taken by the organization to address these risks. **UNGC:** Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	1. No U.S.-based employees are subject to collective bargaining agreements. 2. We do not currently conduct this assessment. **IBC** **UNGC Principle 3**

THEME	METRIC/QUESTION	RESPONSE/FRAMEWORK ALIGNMENT
Human Rights	Businesses should support and respect the protection of internationally proclaimed human rights; and make sure they are not complicit in human rights abuses.	Our Human Rights statement, Modern Slavery Act disclosure and Vendor Code of Conduct outline our position on human rights. More info can be found in the Human Capital Management section of this Annual Report, and our ESG Performance Data Summary pgs 4–5 and 13 (www.bankofamerica.com/ESGreports). **UNGC Principles 1 & 2**
Health and Well Being	**Health and Safety (%):** **1.** The number and rate of fatalities as a result of work-related injury; high-consequence work-related injuries (excluding fatalities); recordable work-related injuries, main types of work-related injury; and the number of hours worked **2.** An explanation of how the organization facilitates workers' access to non-occupational medical and healthcare services and the scope of access provided for employees and workers	1. This metric (fatalities/injuries) is not material for the banking industry. 2. Refer to the Human Capital Management section of this Annual Report. **IBC**
Skills For the Future	**Training provided (#, $):** **1.** Average hours of training per person that the organization's employees have undertaken during the reporting period, by gender and employee category (total number of trainings provided to employees divided by the number of employees) **2.** Average training and development expenditure per full time employee	**1. Training Hours Per Person** Avg per Person 49 Avg per Female 52 Avg per Person of Color 58 Avg per Black/African American 59 Avg per Hispanic/Latino 67 2. $1,668 per employee **IBC**
	Number of unfilled "Skilled" positions (#, %): **1.** Number of unfilled "Skilled" positions (#) **2.** Percentage of unfilled "Skilled" positions for which the company will hire unskilled candidates and train them. (%)	Bank of America is committed to creating opportunities for our current and prospective employees to grow and develop, including re-skilling for specialized jobs. After exceeding our goal in 2021 to hire more than 10,000 teammates from LMI neighborhoods through our Pathways career program, we've committed to making an additional 10,000 LMI hires by 2025 through expanded partnerships with community colleges and local organizations like Year Up, UnidosUS and the National Urban League. For more information on how we attract and develop talent, refer to the Human Capital Management section of this Annual Report. **IBC**

SASB Activity Metrics/Other

Our responses to the SASB Activity Metrics referenced below can be found within our 2021 Financial Review. We have provided the specific page numbers and location (where appropriate) where each response to the Activity Metric can be located.

Reference	Response
FN-CB-000.A	Business Segment Operations: Consumer Banking — see Deposits section on page 77
FN-CB-000.B	Note 5 on pages 153–164 for disclosure of our Loans and Leases.
FN-IB-000.A	Global Investment Banking section on page 82 for disclosure of our Investment Banking activity and Note 6 on pages 164–168 for disclosure of our securitization transactions.
FN-IB-000.C	Global Markets tables and discussion on pages 83–84, and the Sales and Trading Revenue table on page 84 for disclosure of the financial results associated with the Corporation's market making transactions.
FN-MF-000.A	Credit Quality Indicators subsection of Note 5 on page 155 for disclosure of 2021 residential and commercial real estate mortgage originations.
FN-AC-000.A **FN-AC-000.B**	Global Wealth & Investment Management Key Indicators and Metrics on page 80 for total Assets Under Management. Refer to the same table and the Client Balances subsection for further detail on the Corporation's client balances under management.
For the following referenced SASB metrics, each requests the total amount of monetary losses for a specific business activity:	
FN-I B -510b.3 **FN-AC-270a.2** **FN-CF-220A.2** **FN-MF-270a.3** **FN-CF-270a.5** **FN-MF-270b.2**	Refer to the disclosure of significant litigation, regulatory matters and material legal proceedings in Note 12 on pages 173–177 of the 2021 Financial Review.

Cautionary Information and Forward-Looking Statements

This report, including the Stakeholder Capitalism Metrics section, contains certain statements regarding Responsible Growth and environmental, social and governance information and opinions, including metrics, goals and commitments and sustainability strategy (ESG Information). The ESG Information included in this report may consider broader definitions of materiality used by certain external frameworks and reporting guidelines. Accordingly, such ESG Information may not be considered material for Securities and Exchange Commission (SEC) reporting purposes, and materiality and the use of the term "material" in the context of these disclosures is distinct from such terms as defined for SEC reporting purposes. Any inclusion of ESG Information in this report in response to a metric or question referencing materiality is not an indication that the subject or information is material to Bank of America for SEC reporting purposes. Additionally, certain statements regarding Responsible Growth and ESG Information are not guarantees or promises that such metrics, goals or commitments will be met and are based on current goals, commitments, estimates, assumptions, developing standards and methodologies and currently available data, which continue to evolve and develop. Such ESG Information may also include the use of non-financial metrics that are subject to significant measurement uncertainties, which may include the methodology, collection and verification of data, various estimates and assumptions and/or underlying data that is obtained from third parties, some of which we cannot independently verify.

Certain statements contained in this report may constitute "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act, including statements about our future financial performance and business, Responsible Growth and ESG Information, which may evolve over time. We use words such as "anticipates," "believes," "expects," "intends," and similar expressions to identify forward-looking statements. Forward-looking statements reflect management's current expectations, plans or forecasts, are not guarantees of future results or performance, involve certain known and unknown risks, uncertainties and assumptions that are difficult to predict and often beyond our control and are inherently uncertain. Actual outcomes and results may differ materially from those expressed in, or implied by, forward-looking statements. You should not place undue reliance on any forward-looking statement and should consider the discussion on forward-looking statements included in the Financial Review section of this report as well as the uncertainties and risks discussed in our 2021 Annual Report on Form 10-K and subsequent SEC filings.

2021 Financial Review

Financial Review
Table of Contents

Management's Discussion and Analysis of Financial Condition and Results of Operations

Bank of America Corporation (the "Corporation") and its management may make certain statements that constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements can be identified by the fact that they do not relate strictly to historical or current facts. Forward-looking statements often use words such as "anticipates," "targets," "expects," "hopes," "estimates," "intends," "plans," "goals," "believes," "continue" and other similar expressions or future or conditional verbs such as "will," "may," "might," "should," "would" and "could." Forward-looking statements represent the Corporation's current expectations, plans or forecasts of its future results, revenues, provision for credit losses, expenses, efficiency ratio, capital measures, strategy and future business and economic conditions more generally, and other future matters. These statements are not guarantees of future results or performance and involve certain known and unknown risks, uncertainties and assumptions that are difficult to predict and are often beyond the Corporation's control. Actual outcomes and results may differ materially from those expressed in, or implied by, any of these forward-looking statements.

You should not place undue reliance on any forward-looking statement and should consider the following uncertainties and risks, as well as the risks and uncertainties more fully discussed under Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K: *and in any of the Corporation's subsequent Securities and Exchange Commission Filings: the Corporation's potential judgments, orders, settlements, penalties, fines and reputational damage resulting from pending or future litigation and regulatory investigations, proceedings and enforcement actions, including as a result of our participation in and execution of government programs related to the Coronavirus Disease 2019 (COVID-19) pandemic, such as the processing of unemployment benefits for California and certain other states; the possibility that the Corporation's future liabilities may be in excess of its recorded liability and estimated range of possible loss for litigation, and regulatory and government actions; the possibility that the Corporation could face increased claims from one or more parties involved in mortgage securitizations; the Corporation's ability to resolve representations and warranties repurchase and related claims; the risks related to the discontinuation of the London Interbank Offered Rate and other reference rates, including increased expenses and litigation and the effectiveness of hedging strategies; uncertainties about the financial stability and growth rates of non-U.S. jurisdictions, the risk that those jurisdictions may face difficulties servicing their sovereign debt, and related stresses on financial markets, currencies and trade, and the Corporation's exposures to such risks, including direct, indirect and operational; the impact of U.S. and global interest rates, inflation, currency exchange rates, economic conditions, trade policies and tensions, including tariffs, and potential geopolitical instability; the impact of the interest rate and inflationary environment on the Corporation's business, financial condition and results of operations; the possibility that future credit losses may be higher than currently expected due to changes in economic assumptions, customer behavior, adverse developments with respect to U.S. or global economic conditions and other uncertainties, including the impact of supply chain disruptions, inflationary pressures and labor shortages on the economic recovery and our business; the Corporation's concentration of credit risk; the Corporation's ability to achieve its expense targets and expectations regarding revenue, net interest income, provision for credit losses, net charge-offs, effective tax rate, loan growth or other projections; adverse changes to the Corporation's credit ratings from the major credit rating agencies; an inability to access capital markets or maintain deposits or borrowing costs; estimates of the fair value and other accounting values, subject to impairment assessments, of certain of the Corporation's assets and liabilities; the estimated or actual impact of changes in accounting standards or assumptions in applying those standards; uncertainty regarding the content, timing and impact of regulatory capital and liquidity requirements; the impact of adverse changes to total loss-absorbing capacity requirements, stress capital buffer requirements and/or global systemically important bank surcharges; the potential impact of actions of the* Board of Governors of the Federal Reserve System *on the Corporation's capital plans; the effect of changes in or interpretations of income tax laws and regulations; the impact of implementation and compliance with U.S. and international laws, regulations and regulatory interpretations, including, but not limited to, recovery and resolution planning requirements, Federal Deposit Insurance Corporation assessments, the Volcker Rule, fiduciary standards, derivatives regulations and the Coronavirus Aid, Relief, and Economic Security Act and any similar or related rules and regulations; a failure or disruption in or breach of the Corporation's operational or security systems or infrastructure, or those of third parties, including as a result of cyberattacks or campaigns; the transition and physical impacts of climate change; our ability to achieve environmental, social and governance goals and commitments or the impact of any changes in the Corporation's sustainability strategy or commitments generally; the impact of any future federal government shutdown and uncertainty regarding the federal government's debt limit or changes in fiscal, monetary or regulatory policy; the emergence of widespread health emergencies or pandemics, including the magnitude and duration of the COVID-19 pandemic and its impact on the U.S. and/or global, financial market conditions and our business, results of operations, financial condition and prospects; the impact of natural disasters, extreme weather events, military conflict, terrorism or other geopolitical events; and other matters.*

Forward-looking statements speak only as of the date they are made, and the Corporation undertakes no obligation to update any forward-looking statement to reflect the impact of circumstances or events that arise after the date the forward-looking statement was made.

Notes to the Consolidated Financial Statements referred to in the Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) are incorporated by reference into the MD&A. Certain prior-year amounts have been reclassified to conform to current-year presentation. Throughout the MD&A, the Corporation uses certain acronyms and abbreviations which are defined in the Glossary.

Executive Summary

Business Overview

The Corporation is a Delaware corporation, a bank holding company (BHC) and a financial holding company. When used in this report, "the Corporation," "we," "us" and "our" may refer to Bank of America Corporation individually, Bank of America Corporation and its subsidiaries, or certain of Bank of America Corporation's subsidiaries or affiliates. Our principal executive offices are located in Charlotte, North Carolina. Through our various bank and nonbank subsidiaries throughout the U.S. and in international markets, we provide a diversified range of

banking and nonbank financial services and products through four business segments: *Consumer Banking*, *Global Wealth & Investment Management (GWIM)*, *Global Banking* and *Global Markets*, with the remaining operations recorded in *All Other*. We operate our banking activities primarily under the Bank of America, National Association (Bank of America, N.A. or BANA) charter. At December 31, 2021, the Corporation had $3.2 trillion in assets and a headcount of approximately 208,000 employees.

As of December 31, 2021, we served clients through operations across the U.S., its territories and approximately 35 countries. Our retail banking footprint covers all major markets in the U.S., and we serve approximately 67 million consumer and small business clients with approximately 4,200 retail financial centers, approximately 16,000 ATMs, and leading digital banking platforms (www.bankofamerica.com) with approximately 41 million active users, including approximately 33 million active mobile users. We offer industry-leading support to approximately three million small business households. Our *GWIM* businesses, with client balances of $3.8 trillion, provide tailored solutions to meet client needs through a full set of investment management, brokerage, banking, trust and retirement products. We are a global leader in corporate and investment banking and trading across a broad range of asset classes serving corporations, governments, institutions and individuals around the world.

Recent Developments

Capital Management

On February 2, 2022, the Corporation announced that the Board of Directors declared a quarterly cash common stock dividend of $0.21 per share, payable on March 25, 2022 to shareholders of record as of March 4, 2022.

For more information on our capital resources and regulatory developments, see Capital Management on page 88.

COVID-19 Pandemic

The Coronavirus Disease 2019 (COVID-19) pandemic (the pandemic) has impacted the Corporation and may continue to do so, as uncertainty remains about the duration of the pandemic and the timing and strength of the global economic recovery. As the pandemic continues to evolve, we regularly evaluate protocols and processes in place to execute our business continuity plans. In conjunction with our efforts to support clients affected by the pandemic, we have cumulatively originated $35.4 billion in loans under the Paycheck Protection Program (PPP) with amounts outstanding of $4.7 billion and $22.7 billion at December 31, 2021 and 2020. For more information on PPP loans, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

The future direct and indirect impact of the pandemic on our businesses, results of operations and financial condition remains uncertain. Should current economic conditions deteriorate or if the pandemic worsens due to various factors, including through the spread of more easily communicable variants of COVID-19, such conditions could have an adverse effect on our businesses and results of operations and could adversely affect our financial condition.

For more information on how the risks related to the pandemic adversely affect our businesses, results of operations and financial condition, see Part 1. Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

LIBOR and Other Benchmark Rates

Subject to the continued publication of certain non-representative London Interbank Offered Rate (LIBOR) benchmark settings based on a modified calculation (i.e., on a “synthetic” basis), British Pound Sterling, Euro, Swiss Franc and Japanese Yen LIBOR settings and one-week and two-month U.S. dollar (USD) LIBOR settings ceased or became no longer representative of the underlying market the rates seek to measure (i.e., non-representative) immediately after December 31, 2021, and the remaining USD LIBOR settings (i.e., overnight, one month, three month, six month and 12 month) will cease or become non-representative immediately after June 30, 2023. Separately, the Federal Reserve, the Office of the Comptroller of the Currency (OCC) and the Federal Deposit Insurance Corporation (FDIC) issued supervisory guidance encouraging banks to cease entering into new contracts that use USD LIBOR as a reference rate by December 31, 2021 subject to certain regulatory-approved exceptions (USD LIBOR Guidance).

As a result, a major transition has been and continues to be in progress in the global financial markets with respect to the replacement of Interbank Offered Rates (IBORs). This is a complex process impacting a variety of our businesses and operations. IBORs have historically been used in many of the Corporation’s products and contracts, including derivatives, consumer and commercial loans, mortgages, floating-rate notes and other adjustable-rate products and financial instruments. In response, the Corporation established an enterprise-wide IBOR transition program, with active involvement of senior management and regular reports to the Management Risk Committee (MRC) and Enterprise Risk Committee (ERC). The program continues to drive the Corporation's industry and regulatory engagement, client and financial contract changes, internal and external communications, technology and operations modifications, including updates to its operational models, systems and processes, introduction of new products, migration of existing clients, and program strategy and governance.

As of December 31, 2021, the Corporation has transitioned or otherwise addressed IBOR-based products and contracts referencing the rates that ceased or became non-representative after December 31, 2021, including LIBOR-linked commercial loans, LIBOR-based adjustable-rate consumer mortgages, LIBOR-linked derivatives and interdealer trading of certain USD LIBOR and other interest rate swaps, and related hedging

arrangements. Additionally, in accordance with the USD LIBOR Guidance, the Corporation has ceased entering into new contracts that use USD LIBOR as a reference rate, subject to certain regulatory-approved exceptions.

The Corporation launched capabilities and services to support the issuance and trading in products indexed to various alternative reference rates (ARRs) and developed employee training programs as well as other internal and external sources of information on the various challenges and opportunities that the replacement of IBORs has presented and continues to present. The Corporation continues to monitor a variety of market scenarios as part of its transition efforts, including risks associated with insufficient preparation by individual market participants or the overall market ecosystem, ability of market participants to meet regulatory and industry-wide recommended milestones and access and demand by clients and market participants to liquidity in certain products, including LIBOR products.

With respect to the transition of LIBOR products referencing USD LIBOR settings ceasing or becoming non-representative as of June 30, 2023, a significant majority of the Corporation's notional contractual exposure to such LIBOR currencies, of which the significant majority is derivatives contracts, have been remediated (i.e., updated to include fallback provisions to ARRs based on market driven protocols, regulatory guidance and industry-recommended fallback provisions and related mechanisms) and the Corporation is continuing to remediate the remaining USD LIBOR exposure. The remaining exposure, a majority of which is made up of derivatives and commercial loans and which represents a small minority of outstanding USD LIBOR notional contractual exposure of the Corporation, will require active dialogue with clients to modify the contracts. For any residual exposures after June 2023 that continue to have no fallback provisions, the Corporation is assessing and planning to leverage relevant contractual and statutory solutions, including relevant state legislation and any future federal legislation, to transition such exposure to ARRs.

The Corporation has implemented regulatory, tax and accounting changes and continues to monitor current and potential impacts of the transition, including Internal Revenue Service tax regulations and guidance and Financial Accounting Standards Board guidance. In addition, the Corporation has engaged impacted clients in connection with the transition by providing ARRs education and the timing of transition events. The Corporation is also working actively with global regulators, industry working groups and trade associations. For more information on the expected replacement of LIBOR and other benchmark rates, see Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

Changes to Overdraft Services

In January 2022, the Corporation announced changes to its overdraft services for consumer and small business clients, which include eliminating non-sufficient funds (NSF) fees beginning in February 2022 and reducing overdraft fees from $35 to $10 beginning in May 2022. Fees from overdraft services were approximately $1 billion in 2021 and recorded in *Consumer Banking* as service charges in the Consolidated Statement of Income. Due to the policy changes, in 2022 the Corporation expects a significant reduction in NSF and overdraft fees.

Financial Highlights

Table 1 Summary Income Statement and Selected Financial Data

(Dollars in millions, except per share information)	2021	2020
Income statement		
Net interest income	$ 42,934	$ 43,360
Noninterest income	46,179	42,168
Total revenue, net of interest expense	89,113	85,528
Provision for credit losses	(4,594)	11,320
Noninterest expense	59,731	55,213
Income before income taxes	33,976	18,995
Income tax expense	1,998	1,101
Net income	31,978	17,894
Preferred stock dividends	1,421	1,421
Net income applicable to common shareholders	$ 30,557	$ 16,473
Per common share information		
Earnings	$ 3.60	$ 1.88
Diluted earnings	3.57	1.87
Dividends paid	0.78	0.72
Performance ratios		
Return on average assets [(1)]	1.05 %	0.67 %
Return on average common shareholders' equity [(1)]	12.23	6.76
Return on average tangible common shareholders' equity [(2)]	17.02	9.48
Efficiency ratio [(1)]	67.03	64.55
Balance sheet at year end		
Total loans and leases	$ 979,124	$ 927,861
Total assets	3,169,495	2,819,627
Total deposits	2,064,446	1,795,480
Total liabilities	2,899,429	2,546,703
Total common shareholders' equity	245,358	248,414
Total shareholders' equity	270,066	272,924

(1) For definitions, see Key Metrics on page 208.
(2) Return on average tangible common shareholders' equity is a non-GAAP financial measure. For more information and a corresponding reconciliation to the most closely related financial measures defined by accounting principles generally accepted in the United States of America (GAAP), see Non-GAAP Reconciliations on page 124.

Net income was $32.0 billion or $3.57 per diluted share in 2021 compared to $17.9 billion or $1.87 per diluted share in 2020. The increase in net income was due to improvement in the provision for credit losses and higher revenue, partially offset by higher noninterest expense.

For discussion and analysis of our consolidated and business segment results of operations for 2020 compared to 2019, see the Financial Highlights and Business Segment Operations sections in the MD&A of the Corporation's 2020 Annual Report on Form 10-K.

Net Interest Income

Net interest income decreased $426 million to $42.9 billion in 2021 compared to 2020. Net interest yield on a fully taxable-equivalent (FTE) basis decreased 24 basis points (bps) to 1.66 percent for 2021. The decrease in net interest income was primarily driven by lower interest rates and average loan balances, partially offset by higher average balances of debt securities. For more information on net interest yield and the FTE basis, see Supplemental Financial Data on page 70, and for more information on interest rate risk management, see Interest Rate Risk Management for the Banking Book on page 118.

Noninterest Income

Table 2 Noninterest Income

(Dollars in millions)		2021		2020
Fees and commissions:				
Card income	$	**6,218**	$	5,656
Service charges		**7,504**		7,141
Investment and brokerage services		**16,690**		14,574
Investment banking fees		**8,887**		7,180
Total fees and commissions		**39,299**		34,551
Market making and similar activities		**8,691**		8,355
Other income		**(1,811)**		(738)
Total noninterest income	$	**46,179**	$	42,168

Noninterest income increased $4.0 billion to $46.2 billion in 2021 compared to 2020. The following highlights the significant changes.

- Card income increased $562 million primarily driven by increased client activity and merchant services revenue.
- Service charges increased $363 million primarily due to higher treasury and credit service charges and increased client activity.
- Investment and brokerage services increased $2.1 billion primarily driven by higher market valuations and assets under management (AUM) flows, partially offset by declines in AUM pricing.
- Investment banking fees increased $1.7 billion primarily due to higher advisory fees as well as higher debt and equity issuance fees.
- Market making and similar activities increased $336 million primarily driven by strong sales and trading performance in Equities, partially offset by a weaker performance in Fixed Income, Currencies and Commodities (FICC), which benefited from a more favorable market environment in 2020.
- Other income decreased $1.1 billion primarily due to a $704 million gain on sales of certain mortgage loans in the prior year, as well as higher partnership losses on tax credit investments.

Provision for Credit Losses

The provision for credit losses improved $15.9 billion to a benefit of $4.6 billion in 2021 compared to 2020. The benefit was primarily due to improvements in the macroeconomic outlook and credit quality. For more information on the provision for credit losses, see Allowance for Credit Losses on page 112.

Noninterest Expense

Table 3 Noninterest Expense

(Dollars in millions)		2021		2020
Compensation and benefits	$	**36,140**	$	32,725
Occupancy and equipment		**7,138**		7,141
Information processing and communications		**5,769**		5,222
Product delivery and transaction related		**3,881**		3,433
Marketing		**1,939**		1,701
Professional fees		**1,775**		1,694
Other general operating		**3,089**		3,297
Total noninterest expense	$	**59,731**	$	55,213

Noninterest expense increased $4.5 billion to $59.7 billion in 2021 compared to 2020. The increase was primarily due to higher compensation and benefits expense, higher costs associated with processing transactional card claims related to state unemployment benefits, a contribution to the Bank of America Foundation and an impairment charge for real estate rationalization.

Income Tax Expense

Table 4 Income Tax Expense

(Dollars in millions)		2021		2020
Income before income taxes	$	**33,976**	$	18,995
Income tax expense		**1,998**		1,101
Effective tax rate		**5.9 %**		5.8 %

Income tax expense was $2.0 billion for 2021 compared to $1.1 billion in 2020, resulting in an effective tax rate of 5.9 percent compared to 5.8 percent.

The effective tax rates for 2021 and 2020 were driven by the impact of our recurring tax preference benefits and positive income tax adjustments from the impact of U.K. tax law changes discussed below. Our recurring tax preference benefits primarily consist of tax credits from environmental, social and governance (ESG) investments in affordable housing and renewable energy, aligning with our responsible growth strategy to address global sustainability challenges. Absent these tax credits, the impact of the U.K. tax law changes and other discrete items, the effective tax rates would have been approximately 25 percent and 26 percent for 2021 and 2020.

In June 2021, the U.K. enacted the 2021 Finance Act, which included an increase in the U.K. corporation income tax rate to 25 percent from 19 percent. This change is effective April 1, 2023 and unfavorably affects income tax expense on future U.K. earnings. In addition, in July 2020, the U.K. enacted a repeal of the final two percent of scheduled decreases in the U.K. corporation income tax rate. As a result, in 2021 and 2020, the Corporation recorded write-ups of U.K. net deferred tax assets of approximately $2.0 billion and $700 million, with corresponding positive income tax adjustments. These write-ups were reversals of previously recorded write-downs of net deferred tax assets for prior changes in the U.K. corporation income tax rate.

Balance Sheet Overview

Table 5 Selected Balance Sheet Data

(Dollars in millions)	December 31 2021	2020	$ Change	% Change
Assets				
Cash and cash equivalents	$ **348,221**	$ 380,463	$ (32,242)	(8)%
Federal funds sold and securities borrowed or purchased under agreements to resell	**250,720**	304,058	(53,338)	(18)
Trading account assets	**247,080**	198,854	48,226	24
Debt securities	**982,627**	684,850	297,777	43
Loans and leases	**979,124**	927,861	51,263	6
Allowance for loan and lease losses	**(12,387)**	(18,802)	6,415	(34)
All other assets	**374,110**	342,343	31,767	9
Total assets	$ **3,169,495**	$ 2,819,627	$ 349,868	12
Liabilities				
Deposits	$ **2,064,446**	$ 1,795,480	$ 268,966	15
Federal funds purchased and securities loaned or sold under agreements to repurchase	**192,329**	170,323	22,006	13
Trading account liabilities	**100,690**	71,320	29,370	41
Short-term borrowings	**23,753**	19,321	4,432	23
Long-term debt	**280,117**	262,934	17,183	7
All other liabilities	**238,094**	227,325	10,769	5
Total liabilities	**2,899,429**	2,546,703	352,726	14
Shareholders' equity	**270,066**	272,924	(2,858)	(1)
Total liabilities and shareholders' equity	$ **3,169,495**	$ 2,819,627	$ 349,868	12

Assets

At December 31, 2021, total assets were approximately $3.2 trillion, up $349.9 billion from December 31, 2020. The increase in assets was primarily due to higher debt securities that were primarily funded by deposit growth, an increase in loans and leases and higher trading account assets, partially offset by lower federal funds sold and securities borrowed or purchased under agreements to resell and cash and cash equivalents.

Cash and Cash Equivalents

Cash and cash equivalents decreased $32.2 billion primarily driven by higher investments in debt securities.

Federal Funds Sold and Securities Borrowed or Purchased Under Agreements to Resell

Federal funds transactions involve lending reserve balances on a short-term basis. Securities borrowed or purchased under agreements to resell are collateralized lending transactions utilized to accommodate customer transactions, earn interest rate spreads and obtain securities for settlement and for collateral. Federal funds sold and securities borrowed or purchased under agreements to resell decreased $53.3 billion primarily due to the investment of excess cash into debt securities.

Trading Account Assets

Trading account assets consist primarily of long positions in equity and fixed-income securities including U.S. government and agency securities, corporate securities and non-U.S. sovereign debt. Trading account assets increased $48.2 billion primarily due to an increase in inventory within *Global Markets*.

Debt Securities

Debt securities primarily include U.S. Treasury and agency securities, mortgage-backed securities (MBS), principally agency MBS, non-U.S. bonds, corporate bonds and municipal debt. We use the debt securities portfolio primarily to manage interest rate and liquidity risk and to leverage market conditions that create economically attractive returns on these investments. Debt securities increased $297.8 billion primarily driven by the deployment of deposit inflows. For more information on debt securities, see *Note 4 – Securities* to the Consolidated Financial Statements.

Loans and Leases

Loans and leases increased $51.3 billion primarily driven by growth in commercial loans and higher securities-based lending within consumer loans. For more information on the loan portfolio, see Credit Risk Management on page 98.

Allowance for Loan and Lease Losses

The allowance for loan and lease losses decreased $6.4 billion primarily due to improvements in the macroeconomic outlook and credit quality. For more information, see Allowance for Credit Losses on page 112.

All Other Assets

All other assets increased $31.8 billion primarily driven by higher margin loans and loans held-for-sale (LHFS).

Liabilities

At December 31, 2021, total liabilities were approximately $2.9 trillion, up $352.7 billion from December 31, 2020, primarily due to deposit growth.

Deposits

Deposits increased $269.0 billion primarily due to an increase in retail and wholesale deposits.

Federal Funds Purchased and Securities Loaned or Sold Under Agreements to Repurchase

Federal funds transactions involve borrowing reserve balances on a short-term basis. Securities loaned or sold under agreements to repurchase are collateralized borrowing transactions utilized to accommodate customer transactions, earn interest rate spreads and finance assets on the balance sheet. Federal funds purchased and securities loaned or sold under agreements to repurchase increased $22.0 billion primarily driven by client activity within *Global Markets*.

Trading Account Liabilities

Trading account liabilities consist primarily of short positions in equity and fixed-income securities including U.S. Treasury and agency securities, corporate securities and non-U.S. sovereign

debt. Trading account liabilities increased $29.4 billion primarily due to higher levels of short positions within *Global Markets*.

Short-term Borrowings

Short-term borrowings provide an additional funding source and primarily consist of Federal Home Loan Bank (FHLB) short-term borrowings, notes payable and various other borrowings that generally have maturities of one year or less. Short-term borrowings increased $4.4 billion primarily due to an increase in short-term commercial paper issuances to manage liquidity needs. For more information on short-term borrowings, see *Note 10 – Securities Financing Agreements, Short-term Borrowings and Restricted Cash* to the Consolidated Financial Statements.

Long-term Debt

Long-term debt increased $17.2 billion primarily due to debt issuances, partially offset by maturities, redemptions and valuation adjustments. For more information on long-term debt, see *Note 11 – Long-term Debt* to the Consolidated Financial Statements.

Shareholders' Equity

Shareholders' equity decreased $2.9 billion primarily due to returns of capital to shareholders through common stock repurchases and common and preferred stock dividends, market value decreases on derivatives and debt securities and the redemption of preferred stock, partially offset by net income.

Cash Flows Overview

The Corporation's operating assets and liabilities support our global markets and lending activities. We believe that cash flows from operations, available cash balances and our ability to generate cash through short- and long-term debt are sufficient to fund our operating liquidity needs. Our investing activities primarily include the debt securities portfolio and loans and leases. Our financing activities reflect cash flows primarily related to customer deposits, securities financing agreements, long-term debt and common and preferred stock. For more information on liquidity, see Liquidity Risk on page 93.

Supplemental Financial Data

Non-GAAP Financial Measures

In this Form 10-K, we present certain non-GAAP financial measures. Non-GAAP financial measures exclude certain items or otherwise include components that differ from the most directly comparable measures calculated in accordance with GAAP. Non-GAAP financial measures are provided as additional useful information to assess our financial condition, results of operations (including period-to-period operating performance) or compliance with prospective regulatory requirements. These non-GAAP financial measures are not intended as a substitute for GAAP financial measures and may not be defined or calculated the same way as non-GAAP financial measures used by other companies.

We view net interest income and related ratios and analyses on an FTE basis, which when presented on a consolidated basis are non-GAAP financial measures. To derive the FTE basis, net interest income is adjusted to reflect tax-exempt income on an equivalent before-tax basis with a corresponding increase in income tax expense. For purposes of this calculation, we use the federal statutory tax rate of 21 percent and a representative state tax rate. Net interest yield, which measures the basis points we earn over the cost of funds, utilizes net interest income on an FTE basis. We believe that presentation of these items on an FTE basis allows for comparison of amounts from both taxable and tax-exempt sources and is consistent with industry practices.

We may present certain key performance indicators and ratios excluding certain items (e.g., debit valuation adjustment (DVA) gains (losses)) which result in non-GAAP financial measures. We believe that the presentation of measures that exclude these items is useful because such measures provide additional information to assess the underlying operational performance and trends of our businesses and to allow better comparison of period-to-period operating performance.

We also evaluate our business based on certain ratios that utilize tangible equity, a non-GAAP financial measure. Tangible equity represents shareholders' equity or common shareholders' equity reduced by goodwill and intangible assets (excluding mortgage servicing rights (MSRs)), net of related deferred tax liabilities ("adjusted" shareholders' equity or common shareholders' equity). These measures are used to evaluate our use of equity. In addition, profitability, relationship and investment models use both return on average tangible common shareholders' equity and return on average tangible shareholders' equity as key measures to support our overall growth objectives. These ratios are as follows:

- Return on average tangible common shareholders' equity measures our net income applicable to common shareholders as a percentage of adjusted average common shareholders' equity. The tangible common equity ratio represents adjusted ending common shareholders' equity divided by total tangible assets.
- Return on average tangible shareholders' equity measures our net income as a percentage of adjusted average total shareholders' equity. The tangible equity ratio represents adjusted ending shareholders' equity divided by total tangible assets.
- Tangible book value per common share represents adjusted ending common shareholders' equity divided by ending common shares outstanding.

We believe ratios utilizing tangible equity provide additional useful information because they present measures of those assets that can generate income. Tangible book value per common share provides additional useful information about the level of tangible assets in relation to outstanding shares of common stock.

The aforementioned supplemental data and performance measures are presented in Tables 6 and 7.

For more information on the reconciliation of these non-GAAP financial measures to the corresponding GAAP financial measures, see Non-GAAP Reconciliations on page 124.

Key Performance Indicators

We present certain key financial and nonfinancial performance indicators (key performance indicators) that management uses when assessing our consolidated and/or segment results. We believe they are useful to investors because they provide additional information about our underlying operational performance and trends. These key performance indicators (KPIs) may not be defined or calculated in the same way as similar KPIs used by other companies. For information on how these metrics are defined, see Key Metrics on page 208.

Our consolidated key performance indicators, which include various equity and credit metrics, are presented in Table 1 on page 67, Table 6 on page 71 and Table 7 on page 72.

For information on key segment performance metrics, see Business Segment Operations on page 75.

Table 6 Selected Annual Financial Data

(In millions, except per share information)	2021	2020	2019
Income statement			
Net interest income	$ 42,934	$ 43,360	$ 48,891
Noninterest income	46,179	42,168	42,353
Total revenue, net of interest expense	89,113	85,528	91,244
Provision for credit losses	(4,594)	11,320	3,590
Noninterest expense	59,731	55,213	54,900
Income before income taxes	33,976	18,995	32,754
Income tax expense	1,998	1,101	5,324
Net income	31,978	17,894	27,430
Net income applicable to common shareholders	30,557	16,473	25,998
Average common shares issued and outstanding	8,493.3	8,753.2	9,390.5
Average diluted common shares issued and outstanding	8,558.4	8,796.9	9,442.9
Performance ratios			
Return on average assets [1]	1.05 %	0.67 %	1.14 %
Return on average common shareholders' equity [1]	12.23	6.76	10.62
Return on average tangible common shareholders' equity [1, 2]	17.02	9.48	14.86
Return on average shareholders' equity [1]	11.68	6.69	10.24
Return on average tangible shareholders' equity [1, 2]	15.71	9.07	13.85
Total ending equity to total ending assets	8.52	9.68	10.88
Total average equity to total average assets	9.02	9.96	11.14
Dividend payout [1]	21.51	38.18	23.65
Per common share data			
Earnings	$ 3.60	$ 1.88	$ 2.77
Diluted earnings	3.57	1.87	2.75
Dividends paid	0.78	0.72	0.66
Book value [1]	30.37	28.72	27.32
Tangible book value [2]	21.68	20.60	19.41
Market capitalization	$ 359,383	$ 262,206	$ 311,209
Average balance sheet			
Total loans and leases	$ 920,401	$ 982,467	$ 958,416
Total assets	3,034,623	2,683,122	2,405,830
Total deposits	1,914,286	1,632,998	1,380,326
Long-term debt	237,703	220,440	201,623
Common shareholders' equity	249,787	243,685	244,853
Total shareholders' equity	273,757	267,309	267,889
Asset quality			
Allowance for credit losses [3]	$ 13,843	$ 20,680	$ 10,229
Nonperforming loans, leases and foreclosed properties [4]	4,697	5,116	3,837
Allowance for loan and lease losses as a percentage of total loans and leases outstanding [4]	1.28 %	2.04 %	0.97 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases [4]	271	380	265
Net charge-offs	$ 2,243	$ 4,121	$ 3,648
Net charge-offs as a percentage of average loans and leases outstanding [4]	0.25 %	0.42 %	0.38 %
Capital ratios at year end [5]			
Common equity tier 1 capital	10.6 %	11.9 %	11.2 %
Tier 1 capital	12.1	13.5	12.6
Total capital	14.1	16.1	14.7
Tier 1 leverage	6.4	7.4	7.9
Supplementary leverage ratio	5.5	7.2	6.4
Tangible equity [2]	6.4	7.4	8.2
Tangible common equity [2]	5.7	6.5	7.3

(1) For definition, see Key Metrics on page 208.
(2) Tangible equity ratios and tangible book value per share of common stock are non-GAAP financial measures. For more information on these ratios and corresponding reconciliations to GAAP financial measures, see Supplemental Financial Data on page 70 and Non-GAAP Reconciliations on page 124.
(3) Includes the allowance for loan and leases losses and the reserve for unfunded lending commitments.
(4) Balances and ratios do not include loans accounted for under the fair value option. For additional exclusions from nonperforming loans, leases and foreclosed properties, see Consumer Portfolio Credit Risk Management – Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity on page 103 and corresponding Table 27 and Commercial Portfolio Credit Risk Management – Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity on page 107 and corresponding Table 34.
(5) For more information, including which approach is used to assess capital adequacy, see Capital Management on page 88.

Table 7 Selected Quarterly Financial Data

	2021 Quarters				2020 Quarters			
(In millions, except per share information)	**Fourth**	Third	Second	First	Fourth	Third	Second	First
Income statement								
Net interest income	**$ 11,410**	$ 11,094	$ 10,233	$ 10,197	$ 10,253	$ 10,129	$ 10,848	$ 12,130
Noninterest income	**10,650**	11,672	11,233	12,624	9,846	10,207	11,478	10,637
Total revenue, net of interest expense	**22,060**	22,766	21,466	22,821	20,099	20,336	22,326	22,767
Provision for credit losses	**(489)**	(624)	(1,621)	(1,860)	53	1,389	5,117	4,761
Noninterest expense	**14,731**	14,440	15,045	15,515	13,927	14,401	13,410	13,475
Income before income taxes	**7,818**	8,950	8,042	9,166	6,119	4,546	3,799	4,531
Income tax expense	**805**	1,259	(1,182)	1,116	649	(335)	266	521
Net income	**7,013**	7,691	9,224	8,050	5,470	4,881	3,533	4,010
Net income applicable to common shareholders	**6,773**	7,260	8,964	7,560	5,208	4,440	3,284	3,541
Average common shares issued and outstanding	**8,226.5**	8,430.7	8,620.8	8,700.1	8,724.9	8,732.9	8,739.9	8,815.6
Average diluted common shares issued and outstanding	**8,304.7**	8,492.8	8,735.5	8,755.6	8,785.0	8,777.5	8,768.1	8,862.7
Performance ratios								
Return on average assets [1]	**0.88 %**	0.99 %	1.23 %	1.13 %	0.78 %	0.71 %	0.53 %	0.65 %
Four-quarter trailing return on average assets [2]	**1.05**	1.04	0.97	0.79	0.67	0.75	0.81	0.99
Return on average common shareholders' equity [1]	**10.90**	11.43	14.33	12.28	8.39	7.24	5.44	5.91
Return on average tangible common shareholders' equity [3]	**15.25**	15.85	19.90	17.08	11.73	10.16	7.63	8.32
Return on average shareholders' equity [1]	**10.27**	11.08	13.47	11.91	8.03	7.26	5.34	6.10
Return on average tangible shareholders' equity [3]	**13.87**	14.87	18.11	16.01	10.84	9.84	7.23	8.29
Total ending equity to total ending assets	**8.52**	8.83	9.15	9.23	9.68	9.82	9.69	10.11
Total average equity to total average assets	**8.56**	8.95	9.11	9.52	9.71	9.76	9.85	10.60
Dividend payout [1]	**25.33**	24.10	17.25	20.68	30.11	35.36	47.87	44.57
Per common share data								
Earnings	**$ 0.82**	$ 0.86	$ 1.04	$ 0.87	$ 0.60	$ 0.51	$ 0.38	$ 0.40
Diluted earnings	**0.82**	0.85	1.03	0.86	0.59	0.51	0.37	0.40
Dividends paid	**0.21**	0.21	0.18	0.18	0.18	0.18	0.18	0.18
Book value [1]	**30.37**	30.22	29.89	29.07	28.72	28.33	27.96	27.84
Tangible book value [3]	**21.68**	21.69	21.61	20.90	20.60	20.23	19.90	19.79
Market capitalization	**$ 359,383**	$ 349,841	$ 349,925	$ 332,337	$ 262,206	$ 208,656	$ 205,772	$ 184,181
Average balance sheet								
Total loans and leases	**$ 945,062**	$ 920,509	$ 907,900	$ 907.723	$ 934,798	$ 974,018	$1,031,387	$ 990,283
Total assets	**3,164,118**	3,076,452	3,015,113	2,879.221	2,791,874	2,739,684	2,704,186	2,494,928
Total deposits	**2,017,223**	1,942,705	1,888,834	1,805.747	1,737,139	1,695,488	1,658,197	1,439,336
Long-term debt	**248,525**	248,988	232,034	220.836	225,423	224,254	221,167	210,816
Common shareholders' equity	**246,519**	252,043	250,948	249,648	246,840	243,896	242,889	241,078
Total shareholders' equity	**270,883**	275,484	274,632	274,047	271,020	267,323	266,316	264,534
Asset quality								
Allowance for credit losses [4]	**$ 13,843**	$ 14,693	$ 15,782	$ 17,997	$ 20,680	$ 21,506	$ 21,091	$ 17,126
Nonperforming loans, leases and foreclosed properties [5]	**4,697**	4,831	5,031	5,299	5,116	4,730	4,611	4,331
Allowance for loan and lease losses as a percentage of total loans and leases outstanding [5]	**1.28 %**	1.43 %	1.55 %	1.80 %	2.04 %	2.07 %	1.96 %	1.51 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases [5]	**271**	279	287	313	380	431	441	389
Net charge-offs	**$ 362**	$ 463	$ 595	$ 823	$ 881	$ 972	$ 1,146	$ 1,122
Annualized net charge-offs as a percentage of average loans and leases outstanding [5]	**0.15 %**	0.20 %	0.27 %	0.37 %	0.38 %	0.40 %	0.45 %	0.46 %
Capital ratios at period end [6]								
Common equity tier 1 capital	**10.6 %**	11.1 %	11.5 %	11.8 %	11.9 %	11.9 %	11.4 %	10.8 %
Tier 1 capital	**12.1**	12.6	13.0	13.3	13.5	13.5	12.9	12.3
Total capital	**14.1**	14.7	15.1	15.6	16.1	16.1	14.8	14.6
Tier 1 leverage	**6.4**	6.6	6.9	7.2	7.4	7.4	7.4	7.9
Supplementary leverage ratio	**5.5**	5.6	5.9	7.0	7.2	6.9	7.1	6.4
Tangible equity [3]	**6.4**	6.7	7.0	7.0	7.4	7.4	7.3	7.7
Tangible common equity [3]	**5.7**	5.9	6.2	6.2	6.5	6.6	6.5	6.7
Total loss-absorbing capacity and long-term debt metrics								
Total loss-absorbing capacity to risk-weighted assets	**26.9 %**	27.7 %	27.7 %	26.8 %	27.4 %	26.9 %	26.0 %	24.6 %
Total loss-absorbing capacity to supplementary leverage exposure	**12.1**	12.4	12.5	14.1	14.5	13.7	14.2	12.8
Eligible long-term debt to risk-weighted assets	**14.1**	14.4	14.1	13.0	13.3	12.9	12.4	11.6
Eligible long-term debt to supplementary leverage exposure	**6.3**	6.4	6.3	6.8	7.1	6.6	6.7	6.1

(1) For definitions, see Key Metrics on page 208.
(2) Calculated as total net income for four consecutive quarters divided by annualized average assets for four consecutive quarters.
(3) Tangible equity ratios and tangible book value per share of common stock are non-GAAP financial measures. For more information on these ratios and corresponding reconciliations to GAAP financial measures, see Supplemental Financial Data on page 70 and Non-GAAP Reconciliations on page 124.
(4) Includes the allowance for loan and lease losses and the reserve for unfunded lending commitments.
(5) Balances and ratios do not include loans accounted for under the fair value option. For additional exclusions from nonperforming loans, leases and foreclosed properties, see Consumer Portfolio Credit Risk Management – Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity on page 103 and corresponding Table 27 and Commercial Portfolio Credit Risk Management – Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity on page 107 and corresponding Table 34.
(6) For more information, including which approach is used to assess capital adequacy, see Capital Management on page 88.

Table 8 Average Balances and Interest Rates - FTE Basis

(Dollars in millions)	Average Balance	Interest Income/ Expense [1]	Yield/ Rate	Average Balance	Interest Income/ Expense [1]	Yield/ Rate	Average Balance	Interest Income/ Expense [1]	Yield/ Rate
		2021			2020			2019	
Earning assets									
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	$ 255,595	$ 172	0.07 %	$ 253,227	$ 359	0.14 %	$ 125,555	$ 1,823	1.45 %
Time deposits placed and other short-term investments	7,603	15	0.19	8,840	29	0.33	9,427	207	2.19
Federal funds sold and securities borrowed or purchased under agreements to resell [2]	267,257	(90)	(0.03)	309,945	903	0.29	279,610	4,843	1.73
Trading account assets	147,891	3,823	2.58	148,076	4,185	2.83	148,076	5,269	3.56
Debt securities	905,169	12,433	1.38	532,266	9,868	1.87	450,090	11,917	2.65
Loans and leases [3]									
Residential mortgage	216,983	5,995	2.76	236,719	7,338	3.10	220,552	7,651	3.47
Home equity	31,014	1,066	3.44	38,251	1,290	3.37	44,600	2,194	4.92
Credit card	75,385	7,772	10.31	85,017	8,759	10.30	94,488	10,166	10.76
Direct/Indirect and other consumer	96,472	2,276	2.36	89,974	2,545	2.83	90,656	3,261	3.60
Total consumer	419,854	17,109	4.08	449,961	19,932	4.43	450,296	23,272	5.17
U.S. commercial	324,795	8,606	2.65	344,095	9,712	2.82	321,467	13,161	4.09
Non-U.S. commercial	99,584	1,752	1.76	106,487	2,208	2.07	103,918	3,402	3.27
Commercial real estate [4]	60,303	1,496	2.48	63,428	1,790	2.82	62,044	2,741	4.42
Commercial lease financing	15,865	462	2.91	18,496	559	3.02	20,691	718	3.47
Total commercial	500,547	12,316	2.46	532,506	14,269	2.68	508,120	20,022	3.94
Total loans and leases	920,401	29,425	3.20	982,467	34,201	3.48	958,416	43,294	4.52
Other earning assets	112,512	2,321	2.06	83,078	2,539	3.06	69,089	4,478	6.48
Total earning assets	2,616,428	48,099	1.84	2,317,899	52,084	2.25	2,040,263	71,831	3.52
Cash and due from banks	31,214			31,885			26,193		
Other assets, less allowance for loan and lease losses	386,981			333,338			339,374		
Total assets	$ 3,034,623			$ 2,683,122			$ 2,405,830		
Interest-bearing liabilities									
U.S. interest-bearing deposits									
Demand and money market deposits	$ 925,970	$ 314	0.03 %	$ 829,719	$ 977	0.12 %	$ 741,126	$ 4,471	0.60 %
Time and savings deposits	161,512	170	0.11	170,750	734	0.43	166,463	1,883	1.13
Total U.S. interest-bearing deposits	1,087,482	484	0.04	1,000,469	1,711	0.17	907,589	6,354	0.70
Non-U.S. interest-bearing deposits	82,769	53	0.06	77,046	232	0.30	71,468	834	1.17
Total interest-bearing deposits	1,170,251	537	0.05	1,077,515	1,943	0.18	979,057	7,188	0.73
Federal funds purchased and securities loaned or sold under agreements to repurchase [5]	210,848	461	0.22	188,511	1,229	0.65	198,533	4,404	2.22
Short-term borrowings and other interest bearing liabilities [2,5]	106,975	(819)	(0.77)	104,955	(242)	(0.23)	77,899	2,804	3.60
Trading account liabilities	54,107	1,128	2.08	41,386	974	2.35	45,449	1,249	2.75
Long-term debt	237,703	3,431	1.44	220,440	4,321	1.96	201,623	6,700	3.32
Total interest-bearing liabilities	1,779,884	4,738	0.27	1,632,807	8,225	0.50	1,502,561	22,345	1.49
Noninterest-bearing sources									
Noninterest-bearing deposits	744,035			555,483			401,269		
Other liabilities [6]	236,947			227,523			234,111		
Shareholders' equity	273,757			267,309			267,889		
Total liabilities and shareholders' equity	$ 3,034,623			$ 2,683,122			$ 2,405,830		
Net interest spread			1.57 %			1.75 %			2.03 %
Impact of noninterest-bearing sources			0.09			0.15			0.40
Net interest income/yield on earning assets [7]		$ 43,361	1.66 %		$ 43,859	1.90 %		$ 49,486	2.43 %

(1) Includes the impact of interest rate risk management contracts. For more information, see Interest Rate Risk Management for the Banking Book on page 118.
(2) For more information on negative interest, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.
(3) Nonperforming loans are included in the respective average loan balances. Income on these nonperforming loans is generally recognized on a cost recovery basis.
(4) Includes U.S. commercial real estate loans of $56.5 billion, $59.8 billion and $57.3 billion, and non-U.S. commercial real estate loans of $3.8 billion, $3.6 billion and $4.7 billion for 2021, 2020 and 2019, respectively.
(5) Certain prior-period amounts have been reclassified to conform to current period presentation.
(6) Includes $30.4 billion, $34.3 billion and $35.5 billion of structured notes and liabilities for 2021, 2020 and 2019, respectively.
(7) Net interest income includes FTE adjustments of $427 million, $499 million and $595 million for 2021, 2020 and 2019, respectively.

Table 9 Analysis of Changes in Net Interest Income - FTE Basis

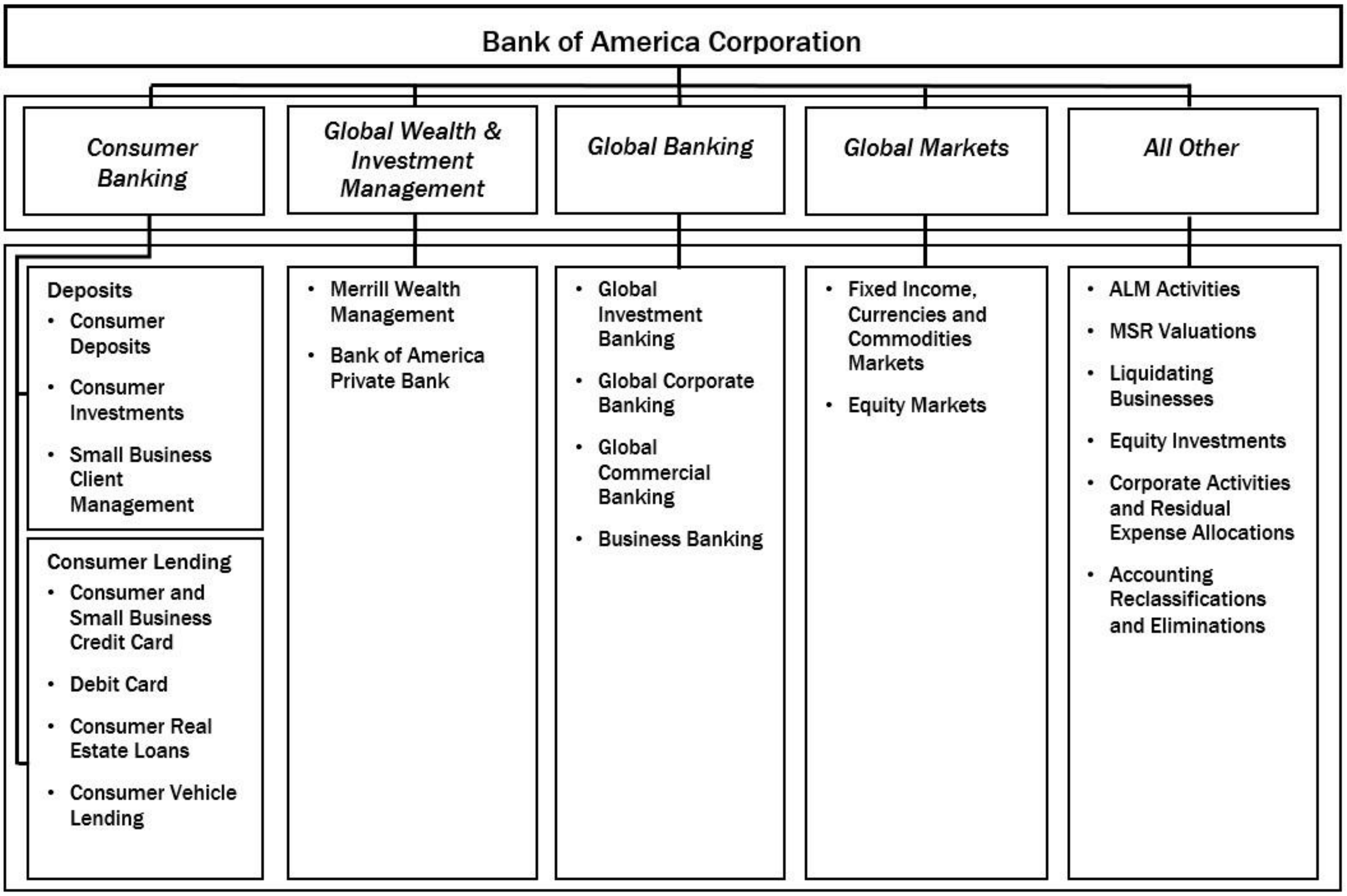
(Dollars in millions)	Due to Change in [1] Volume	Due to Change in [1] Rate	Net Change	Due to Change in [1] Volume	Due to Change in [1] Rate	Net Change
	From 2020 to 2021			From 2019 to 2020		
Increase (decrease) in interest income						
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	$ (1)	$ (186)	$ (187)	$ 1,849	$ (3,313)	$ (1,464)
Time deposits placed and other short-term investments	(4)	(10)	(14)	(13)	(165)	(178)
Federal funds sold and securities borrowed or purchased under agreements to resell	(128)	(865)	(993)	519	(4,459)	(3,940)
Trading account assets	—	(362)	(362)	3	(1,087)	(1,084)
Debt securities	7,059	(4,494)	2,565	2,188	(4,237)	(2,049)
Loans and leases						
Residential mortgage	(612)	(731)	(1,343)	563	(876)	(313)
Home equity	(245)	21	(224)	(312)	(592)	(904)
Credit card	(994)	7	(987)	(1,018)	(389)	(1,407)
Direct/Indirect and other consumer	185	(454)	(269)	(22)	(694)	(716)
Total consumer			(2,823)			(3,340)
U.S. commercial	(553)	(553)	(1,106)	912	(4,361)	(3,449)
Non-U.S. commercial	(147)	(309)	(456)	80	(1,274)	(1,194)
Commercial real estate	(89)	(205)	(294)	63	(1,014)	(951)
Commercial lease financing	(80)	(17)	(97)	(76)	(83)	(159)
Total commercial			(1,953)			(5,753)
Total loans and leases			(4,776)			(9,093)
Other earning assets	904	(1,122)	(218)	905	(2,844)	(1,939)
Net decrease in interest income			$ (3,985)			$ (19,747)
Increase (decrease) in interest expense						
U.S. interest-bearing deposits						
Demand and money market deposit accounts	$ 134	$ (797)	$ (663)	$ 507	$ (4,001)	$ (3,494)
Time and savings deposits	(39)	(525)	(564)	46	(1,195)	(1,149)
Total U.S. interest-bearing deposits			(1,227)			(4,643)
Non-U.S. interest-bearing deposits	16	(195)	(179)	67	(669)	(602)
Total interest-bearing deposits			(1,406)			(5,245)
Federal funds purchased and securities loaned or sold under agreements to repurchase [2]	142	(910)	(768)	(219)	(2,956)	(3,175)
Short-term borrowings and other interest bearing liabilities [2]	(4)	(573)	(577)	974	(4,020)	(3,046)
Trading account liabilities	298	(144)	154	(111)	(164)	(275)
Long-term debt	338	(1,228)	(890)	619	(2,998)	(2,379)
Net decrease in interest expense			(3,487)			(14,120)
Net decrease in net interest income [3]			$ (498)			$ (5,627)

[1] The changes for each category of interest income and expense are divided between the portion of change attributable to the variance in volume and the portion of change attributable to the variance in rate for that category. The unallocated change in rate or volume variance is allocated between the rate and volume variances.
[2] Certain prior-period amounts have been reclassified to conform to current-period presentation.
[3] Includes changes in FTE basis adjustments of a $72 million decrease from 2020 to 2021 and a $96 million decrease from 2019 to 2020.

Business Segment Operations

Segment Description and Basis of Presentation

We report our results of operations through the following four business segments: *Consumer Banking, GWIM, Global Banking* and *Global Markets*, with the remaining operations recorded in *All Other*. We manage our segments and report their results on an FTE basis. The primary activities, products and businesses of the business segments and *All Other* are shown below.



We periodically review capital allocated to our businesses and allocate capital annually during the strategic and capital planning processes. We utilize a methodology that considers the effect of regulatory capital requirements in addition to internal risk-based capital models. Our internal risk-based capital models use a risk-adjusted methodology incorporating each segment's credit, market, interest rate, business and operational risk components. For more information on the nature of these risks, see Managing Risk on page 85. The capital allocated to the business segments is referred to as allocated capital. Allocated equity in the reporting units is comprised of allocated capital plus capital for the portion of goodwill and intangibles specifically assigned to the reporting unit. For more information, including the definition of a reporting unit, see *Note 7 – Goodwill and Intangible Assets* to the Consolidated Financial Statements.

For information on our presentation of financial information on an FTE basis, see Supplemental Financial Data on page 70, and for reconciliations to consolidated total revenue, net income and year-end total assets, see *Note 23 – Business Segment Information* to the Consolidated Financial Statements.

Effective October 1, 2021, a business activity previously included in *Global Markets* is being reported as a liquidating business in *All Other*, consistent with a realignment in performance reporting to senior management. The activity was not material to *Global Markets'* results of operations and historical results have not been restated. For more information, see *Note 23 – Business Segment Information* to the Consolidated Financial Statements.

Key Performance Indicators

We present certain key financial and nonfinancial performance indicators that management uses when evaluating segment results. We believe they are useful to investors because they provide additional information about our segments' operational performance, customer trends and business growth.

Consumer Banking

(Dollars in millions)	Deposits 2021	Deposits 2020	Consumer Lending 2021	Consumer Lending 2020	Total Consumer Banking 2021	Total Consumer Banking 2020	% Change
Net interest income	$ 14,358	$ 13,739	$ 10,571	$ 10,959	$ 24,929	$ 24,698	1 %
Noninterest income:							
Card income	(28)	(20)	5,200	4,693	5,172	4,673	11
Service charges	3,535	3,416	3	1	3,538	3,417	4
All other income	223	310	143	164	366	474	(23)
Total noninterest income	3,730	3,706	5,346	4,858	9,076	8,564	6
Total revenue, net of interest expense	18,088	17,445	15,917	15,817	34,005	33,262	2
Provision for credit losses	240	379	(1,275)	5,386	(1,035)	5,765	(118)
Noninterest expense	11,650	11,508	7,640	7,374	19,290	18,882	2
Income before income taxes	6,198	5,558	9,552	3,057	15,750	8,615	83
Income tax expense	1,519	1,362	2,340	749	3,859	2,111	83
Net income	$ 4,679	$ 4,196	$ 7,212	$ 2,308	$ 11,891	$ 6,504	83
Effective tax rate (1)					24.5 %	24.5 %	
Net interest yield	1.48 %	1.69 %	3.77 %	3.53 %	2.45	2.88	
Return on average allocated capital	39	35	27	9	31	17	
Efficiency ratio	64.41	65.97	48.00	46.62	56.73	56.77	
Balance Sheet							
Average							
Total loans and leases	$ 4,431	$ 5,144	$ 279,630	$ 310,436	$ 284,061	$ 315,580	(10)%
Total earning assets (2)	973,018	813,779	280,080	310,862	1,016,751	858,724	18
Total assets (2)	1,009,387	849,924	285,532	314,599	1,058,572	898,606	18
Total deposits	976,093	816,968	6,934	6,698	983,027	823,666	19
Allocated capital	12,000	12,000	26,500	26,500	38,500	38,500	—
Year end							
Total loans and leases	$ 4,206	$ 4,673	$ 282,305	$ 295,261	$ 286,511	$ 299,934	(4)%
Total earning assets (2)	1,048,009	899,951	282,850	295,627	1,090,331	945,343	15
Total assets (2)	1,082,449	939,629	289,220	299,185	1,131,142	988,580	14
Total deposits	1,049,085	906,092	5,910	6,560	1,054,995	912,652	16

(1) Estimated at the segment level only.
(2) In segments and businesses where the total of liabilities and equity exceeds assets, we allocate assets from *All Other* to match the segments' and businesses' liabilities and allocated shareholders' equity. As a result, total earning assets and total assets of the businesses may not equal total *Consumer Banking*.

Consumer Banking, comprised of Deposits and Consumer Lending, offers a diversified range of credit, banking and investment products and services to consumers and small businesses. Deposits and Consumer Lending include the net impact of migrating customers and their related deposit, brokerage asset and loan balances between Deposits, Consumer Lending and *GWIM*, as well as other client-managed businesses. Our customers and clients have access to a coast-to-coast network including financial centers in 38 states and the District of Columbia. As of December 31, 2021, our network includes approximately 4,200 financial centers, approximately 16,000 ATMs, nationwide call centers and leading digital banking platforms with more than 41 million active users, including approximately 33 million active mobile users.

Consumer Banking Results

Net income for *Consumer Banking* increased $5.4 billion to $11.9 billion primarily due to improvement in the provision for credit losses and higher revenue, partially offset by higher noninterest expense. Net interest income increased $231 million to $24.9 billion primarily due to the benefit of higher deposit balances and the acceleration of net capitalized loan fees due to PPP loan forgiveness, partially offset by lower interest rates and loan balances. Noninterest income increased $512 million to $9.1 billion primarily driven by higher card income and service charges due to increased client activity, partially offset by the allocation of asset and liability management (ALM) results.

The provision for credit losses improved $6.8 billion to a benefit of $1.0 billion primarily driven by reserve releases due to improvements in the macroeconomic outlook and credit quality. Noninterest expense increased $408 million to $19.3 billion primarily driven by an impairment charge for real estate rationalization, the contribution to the Bank of America Foundation, cost of increased client activity and continued investments for business growth, including the merchant services platform, partially offset by lower COVID-19 related costs.

The return on average allocated capital was 31 percent, up from 17 percent, driven by higher net income. For more information on capital allocated to the business segments, see Business Segment Operations on page 75.

Deposits

Deposits includes the results of consumer deposit activities that consist of a comprehensive range of products provided to consumers and small businesses. Our deposit products include noninterest- and interest-bearing checking accounts, money market savings accounts, traditional savings accounts, CDs and IRAs, as well as investment accounts and products. Net interest income is allocated to the deposit products using our funds transfer pricing process that matches assets and liabilities with similar interest rate sensitivity and maturity characteristics. Deposits generates fees such as account service fees, non-sufficient funds fees, overdraft charges and ATM fees, as well as investment and brokerage fees from Consumer Investment accounts. Consumer Investments serves investment client relationships through the Merrill Edge integrated investing and banking service platform, providing investment advice and guidance, client brokerage asset services, self-directed online investing and key banking capabilities including access to the Corporation's network of financial centers and ATMs.

Net income for Deposits increased $483 million to $4.7 billion due to higher revenue and lower provision for credit losses, partially offset by higher noninterest expense. Net interest income increased $619 million to $14.4 billion primarily due to the benefit of higher deposit balances. Noninterest income increased $24 million to $3.7 billion primarily driven by higher service charges and investment and brokerage fees, largely offset by the allocation of ALM results.

The provision for credit losses decreased $139 million to $240 million due to an improved macroeconomic outlook. Noninterest expense increased $142 million to $11.7 billion primarily driven by an impairment charge for real estate rationalization, and the cost of increased client activity and continued investments for business growth, partially offset by lower COVID-19 related costs.

Average deposits increased $159.1 billion to $976.1 billion primarily due to net inflows of $90.4 billion in checking and time deposits and $68.0 billion in traditional savings and money market savings driven by strong organic growth and government stimulus measures.

The table below provides key performance indicators for Deposits. Management uses these metrics, and we believe they are useful to investors because they provide additional information to evaluate our deposit profitability and digital/ mobile trends.

Key Statistics – Deposits

	2021	2020
Total deposit spreads (excludes noninterest costs) (1)	**1.69%**	1.94%
Year End		
Consumer investment assets (in millions) (2)	**$ 368,831**	$306,104
Active digital banking users (in thousands) (3)	**41,365**	39,315
Active mobile banking users (in thousands) (4)	**32,980**	30,783
Financial centers	**4,173**	4,312
ATMs	**16,209**	16,904

(1) Includes deposits held in Consumer Lending.
(2) Includes client brokerage assets, deposit sweep balances and AUM in *Consumer Banking*.
(3) Represents mobile and/or online active users over the past 90 days.
(4) Represents mobile active users over the past 90 days.

Consumer investment assets increased $62.7 billion to $368.8 billion driven by market performance and client flows. Active mobile banking users increased approximately two million, reflecting continuing changes in our customers' banking preferences. We had a net decrease of 139 financial centers as we continue to optimize our consumer banking network.

Consumer Lending

Consumer Lending offers products to consumers and small businesses across the U.S. The products offered include debit and credit cards, residential mortgages and home equity loans, and direct and indirect loans such as automotive, recreational vehicle and consumer personal loans. In addition to earning net interest spread revenue on its lending activities, Consumer Lending generates interchange revenue from debit and credit card transactions, late fees, cash advance fees, annual credit card fees, mortgage banking fee income and other miscellaneous fees. Consumer Lending products are available to our customers through our retail network, direct telephone, and online and mobile channels. Consumer Lending results also include the impact of servicing residential mortgages and home equity loans, including loans held on the balance sheet of Consumer Lending and loans serviced for others.

Net income for Consumer Lending was $7.2 billion, an increase of $4.9 billion, primarily due to improvement in the provision for credit losses. Net interest income declined $388 million to $10.6 billion primarily due to lower interest rates and loan balances. Noninterest income increased $488 million to $5.3 billion primarily driven by higher card income due to increased client activity.

The provision for credit losses improved $6.7 billion to a benefit of $1.3 billion primarily driven by reserve releases due to improvements in the macroeconomic outlook and credit quality. Noninterest expense increased $266 million to $7.6 billion primarily driven by continued investments for business growth, partially offset by lower COVID-19 related costs.

Average loans decreased $30.8 billion to $279.6 billion primarily driven by a decline in residential mortgage and credit card loans.

The table below provides key performance indicators for Consumer Lending. Management uses these metrics, and we believe they are useful to investors because they provide additional information about loan growth and profitability.

Key Statistics – Consumer Lending

(Dollars in millions)	2021	2020
Total credit card [1]		
Gross interest yield [2]	**10.17 %**	10.27 %
Risk-adjusted margin [3]	**10.17**	9.16
New accounts (in thousands)	**3,594**	2,505
Purchase volumes	**$ 311,571**	$ 251,599
Debit card purchase volumes	**$ 473,770**	$ 384,503

(1) Includes *GWIM's* credit card portfolio.
(2) Calculated as the effective annual percentage rate divided by average loans.
(3) Calculated as the difference between total revenue, net of interest expense, and net credit losses divided by average loans.

During 2021, the total risk-adjusted margin increased 101 bps primarily driven by lower net credit losses, higher fee income and higher net interest margin. Total credit card purchase volumes increased $60.0 billion to $311.6 billion as spending continued to recover, with improvements across all categories. Debit card purchase volumes increased $89.3 billion to $473.8 billion due to continued retail growth from the pandemic recovery, as well as the impact of government stimulus measures, and tax refunds.

Key Statistics – Loan Production [1]

(Dollars in millions)	2021	2020
Consumer Banking:		
First mortgage	**$ 45,976**	$ 43,197
Home equity	**3,996**	6,930
Total [2]:		
First mortgage	**$ 79,692**	$ 69,086
Home equity	**4,895**	8,160

(1) The loan production amounts represent the unpaid principal balance of loans and, in the case of home equity, the principal amount of the total line of credit.
(2) In addition to loan production in *Consumer Banking*, there is also first mortgage and home equity loan production in *GWIM.*

First mortgage loan originations for *Consumer Banking* and the total Corporation increased $2.8 billion and $10.6 billion during 2021 primarily driven by higher demand.

Home equity production in *Consumer Banking* and the total Corporation decreased $2.9 billion and $3.3 billion during 2021 primarily driven by lower demand due to increased borrower liquidity.

Global Wealth & Investment Management

(Dollars in millions)	2021	2020	% Change
Net interest income	$ 5,664	$ 5,468	4 %
Noninterest income:			
Investment and brokerage services	14,312	12,270	17
All other income	772	846	(9)
Total noninterest income	15,084	13,116	15
Total revenue, net of interest expense	20,748	18,584	12
Provision for credit losses	(241)	357	n/m
Noninterest expense	15,258	14,160	8
Income before income taxes	5,731	4,067	41
Income tax expense	1,404	996	41
Net income	$ 4,327	$ 3,071	41
Effective tax rate	24.5 %	24.5 %	
Net interest yield	1.51	1.73	
Return on average allocated capital	26	21	
Efficiency ratio	73.54	76.19	
Balance Sheet			
Average			
Total loans and leases	$ 196,899	$ 183,402	7 %
Total earning assets	374,273	316,008	18
Total assets	386,918	328,384	18
Total deposits	340,124	287,123	18
Allocated capital	16,500	15,000	10
Year end			
Total loans and leases	$ 208,971	$ 188,562	11 %
Total earning assets	425,112	356,873	19
Total assets	438,275	369,736	19
Total deposits	390,143	322,157	21

n/m = not meaningful

GWIM consists of two primary businesses: Merrill Wealth Management (MWM) and Bank of America Private Bank.

MWM's advisory business provides a high-touch client experience through a network of financial advisors focused on clients with over $250,000 in total investable assets. MWM provides tailored solutions to meet clients' needs through a full set of investment management, brokerage, banking and retirement products.

Bank of America Private Bank, together with MWM's Private Wealth Management business, provides comprehensive wealth management solutions targeted to high net worth and ultra high net worth clients, as well as customized solutions to meet clients' wealth structuring, investment management, trust and banking needs, including specialty asset management services.

Net income for *GWIM* increased $1.3 billion to $4.3 billion driven by higher revenue and improvement in the provision for credit losses, partially offset by higher noninterest expense. The operating margin was 28 percent compared to 22 percent a year ago.

Net interest income increased $196 million to $5.7 billion due to the benefits of loan and deposit growth, partially offset by lower interest rates.

Noninterest income, which primarily includes investment and brokerage services income, increased $2.0 billion to $15.1 billion primarily due to higher market valuations and positive AUM flows, partially offset by declines in AUM pricing.

The provision for credit losses improved $598 million to a benefit of $241 million primarily due to improvements in the macroeconomic outlook and credit quality. Noninterest expense increased $1.1 billion to $15.3 billion primarily driven by higher revenue-related incentives.

The return on average allocated capital was 26 percent, up from 21 percent, due to higher net income, partially offset by an increase in allocated capital. For more information on capital allocated to the business segments, see Business Segment Operations on page 75.

Average loans increased $13.5 billion to $196.9 billion primarily driven by securities-based lending, custom lending and residential mortgage. Average deposits increased $53.0 billion to $340.1 billion primarily driven by inflows from new accounts and client responses to market volatility.

MWM revenue of $17.4 billion increased 14 percent primarily driven by the benefits of higher market valuations, positive AUM flows and loan and deposit growth.

Bank of America Private Bank revenue of $3.3 billion remained relatively flat with the benefits of higher market valuations, AUM flows, and loan and deposit growth mostly offset by the realignment of certain business results to MWM.

Key Indicators and Metrics

(Dollars in millions)		2021		2020
Revenue by Business				
Merrill Wealth Management	**$**	**17,448**	$	15,292
Bank of America Private Bank		**3,300**		3,292
Total revenue, net of interest expense	**$**	**20,748**	$	18,584
Client Balances by Business, at period end				
Merrill Wealth Management	**$**	**3,214,881**	$	2,808,340
Bank of America Private Bank		**625,453**		541,464
Total client balances	**$**	**3,840,334**	$	3,349,804
Client Balances by Type, at period end				
Assets under management	**$**	**1,638,782**	$	1,408,465
Brokerage and other assets		**1,655,021**		1,479,614
Deposits		**390,143**		322,157
Loans and leases [(1)]		**212,251**		191,124
Less: Managed deposits in assets under management		**(55,863)**		(51,556)
Total client balances	**$**	**3,840,334**	$	3,349,804
Assets Under Management Rollforward				
Assets under management, beginning of period	**$**	**1,408,465**	$	1,275,555
Net client flows		**66,250**		19,596
Market valuation/other		**164,067**		113,314
Total assets under management, end of period	**$**	**1,638,782**	$	1,408,465
Total wealth advisors, at period end [(2)]		**18,846**		20,103

(1) Includes margin receivables which are classified in customer and other receivables on the Consolidated Balance Sheet.
(2) Includes advisors across all wealth management businesses in *GWIM* and *Consumer Banking*. Prior period has been revised to conform to current-period presentation.

Client Balances

Client balances managed under advisory and/or discretion of *GWIM* are AUM and are typically held in diversified portfolios. Fees earned on AUM are calculated as a percentage of clients' AUM balances. The asset management fees charged to clients per year depend on various factors, but are commonly driven by the breadth of the client's relationship. The net client AUM flows represent the net change in clients' AUM balances over a specified period of time, excluding market appreciation/depreciation and other adjustments.

Client balances increased $490.5 billion, or 15 percent, to $3.8 trillion at December 31, 2021 compared to December 31, 2020. The increase in client balances was primarily due to higher market valuations and positive client flows.

Global Banking

(Dollars in millions)	2021	2020	% Change
Net interest income	$ 8,511	$ 9,013	(6)%
Noninterest income:			
Service charges	3,523	3,238	9
Investment banking fees	5,107	4,010	27
All other income	3,734	2,726	37
Total noninterest income	12,364	9,974	24
Total revenue, net of interest expense	20,875	18,987	10
Provision for credit losses	(3,201)	4,897	n/m
Noninterest expense	10,632	9,342	14
Income before income taxes	13,444	4,748	n/m
Income tax expense	3,630	1,282	n/m
Net income	$ 9,814	$ 3,466	n/m
Effective tax rate	27.0 %	27.0 %	
Net interest yield	1.55	1.86	
Return on average allocated capital	23	8	
Efficiency ratio	50.93	49.20	
Balance Sheet			
Average			
Total loans and leases	$ 329,655	$ 382,264	(14)%
Total earning assets	549,749	485,688	13
Total assets	611,304	542,302	13
Total deposits	522,790	456,562	15
Allocated capital	42,500	42,500	—
Year end			
Total loans and leases	$ 352,933	$ 339,649	4 %
Total earning assets	574,583	522,650	10
Total assets	638,131	580,561	10
Total deposits	551,752	493,748	12

n/m = not meaningful

Global Banking, which includes Global Corporate Banking, Global Commercial Banking, Business Banking and Global Investment Banking, provides a wide range of lending-related products and services, integrated working capital management and treasury solutions, and underwriting and advisory services through our network of offices and client relationship teams. Our lending products and services include commercial loans, leases, commitment facilities, trade finance, commercial real estate lending and asset-based lending. Our treasury solutions business includes treasury management, foreign exchange, short-term investing options and merchant services. We also provide investment banking products to our clients such as debt and equity underwriting and distribution, and merger-related and other advisory services. Underwriting debt and equity issuances, fixed-income and equity research, and certain market-based activities are executed through our global broker-dealer affiliates, which are our primary dealers in several countries. Within *Global Banking*, Global Corporate Banking clients generally include large global corporations, financial institutions and leasing clients. Global Commercial Banking clients generally include middle-market companies, commercial real estate firms and not-for-profit companies. Business Banking clients include mid-sized U.S.-based businesses requiring customized and integrated financial advice and solutions.

Net income for *Global Banking* increased $6.3 billion to $9.8 billion driven by improvement in the provision for credit losses and higher revenue, partially offset by higher noninterest expense.

Net interest income decreased $502 million to $8.5 billion primarily due to the impact of lower average loan balances and deposit spreads, partially offset by the benefits of higher deposit balances and credit spreads.

Noninterest income increased $2.4 billion to $12.4 billion driven by higher investment banking fees, higher valuation-driven adjustments on the fair value loan portfolio, debt securities and leveraged loans, higher income from ESG investment activities, as well as higher treasury and credit service charges.

The provision for credit losses improved $8.1 billion to a benefit of $3.2 billion primarily driven by reserve releases due to improvements in the macroeconomic outlook and credit quality.

Noninterest expense increased $1.3 billion to $10.6 billion, primarily due to higher revenue-related incentives and higher operating costs.

The return on average allocated capital was 23 percent, up from eight percent, due to higher net income. For more information on capital allocated to the business segments, see Business Segment Operations on page 75.

Global Corporate, Global Commercial and Business Banking

Global Corporate, Global Commercial and Business Banking each include Business Lending and Global Transaction Services activities. Business Lending includes various lending-related products and services, and related hedging activities, including commercial loans, leases, commitment facilities, trade finance, real estate lending and asset-based lending. Global Transaction Services includes deposits, treasury management, credit card, foreign exchange and short-term investment products.

The table below and following discussion present a summary of the results, which exclude certain investment banking, merchant services and PPP activities in Global Banking.

Global Corporate, Global Commercial and Business Banking

	Global Corporate Banking		Global Commercial Banking		Business Banking		Total	
(Dollars in millions)	**2021**	2020	**2021**	2020	**2021**	2020	**2021**	2020
Revenue								
Business Lending	**$ 3,725**	$ 3,552	**$ 3,676**	$ 3,743	**$ 225**	$ 261	**$ 7,626**	$ 7,556
Global Transaction Services	**3,127**	2,986	**3,209**	3,169	**889**	893	**7,225**	7,048
Total revenue, net of interest expense	**$ 6,852**	$ 6,538	**$ 6,885**	$ 6,912	**$ 1,114**	$ 1,154	**$ 14,851**	$ 14,604
Balance Sheet								
Average								
Total loans and leases	**$ 150,159**	$ 179,393	**$ 161,012**	$ 182,212	**$ 12,763**	$ 14,410	**$ 323,934**	$ 376,015
Total deposits	**251,303**	216,371	**213,708**	191,813	**56,321**	48,214	**521,332**	456,398
Year end								
Total loans and leases	**$ 163,027**	$ 153,126	**$ 175,228**	$ 164,641	**$ 12,822**	$ 13,242	**$ 351,077**	$ 331,009
Total deposits	**259,160**	233,484	**232,670**	207,597	**57,848**	52,150	**549,678**	493,231

Business Lending revenue increased $70 million in 2021 compared to 2020 primarily due to higher credit spreads and income from ESG investment activities, partially offset by the impact of lower average loan balances.

Global Transaction Services revenue increased $177 million in 2021 compared to 2020 driven by the benefit of higher deposit balances and treasury service charges, partially offset by lower deposit spreads.

Average loans and leases decreased 14 percent in 2021 compared to 2020 driven by client paydowns and lower demand. Average deposits increased 14 percent primarily driven by elevated balances from prior-year inflows on client responses to market volatility and government stimulus measures.

Global Investment Banking

Client teams and product specialists underwrite and distribute debt, equity and loan products, and provide advisory services and tailored risk management solutions. The economics of certain investment banking and underwriting activities are shared primarily between *Global Banking* and *Global Markets* under an internal revenue-sharing arrangement. *Global Banking* originates certain deal-related transactions with our corporate and commercial clients that are executed and distributed by *Global Markets*. To provide a complete discussion of our consolidated investment banking fees, the following table presents total Corporation investment banking fees and the portion attributable to *Global Banking*.

Investment Banking Fees

	Global Banking		Total Corporation	
(Dollars in millions)	**2021**	2020	**2021**	2020
Products				
Advisory	**$ 2,139**	$ 1,458	**$ 2,311**	$ 1,621
Debt issuance	**1,736**	1,555	**4,015**	3,443
Equity issuance	**1,232**	997	**2,784**	2,328
Gross investment banking fees	**5,107**	4,010	**9,110**	7,392
Self-led deals	**(93)**	(93)	**(223)**	(212)
Total investment banking fees	**$ 5,014**	$ 3,917	**$ 8,887**	$ 7,180

Total Corporation investment banking fees, excluding self-led deals, of $8.9 billion, which are primarily included within *Global Banking* and *Global Markets*, increased 24 percent primarily driven by higher advisory fees as well as higher debt issuance and equity issuance fees.

Global Markets

(Dollars in millions)	2021	2020	% Change
Net interest income	$ 4,011	$ 4,646	(14)%
Noninterest income:			
Investment and brokerage services	1,979	1,973	—
Investment banking fees	3,616	2,991	21
Market making and similar activities	8,760	8,471	3
All other income	889	684	30
Total noninterest income	15,244	14,119	8
Total revenue, net of interest expense	19,255	18,765	3
Provision for credit losses	65	251	(74)
Noninterest expense	13,032	11,417	14
Income before income taxes	6,158	7,097	(13)
Income tax expense	1,601	1,845	(13)
Net income	$ 4,557	$ 5,252	(13)
Effective tax rate	26.0 %	26.0 %	
Return on average allocated capital	12	15	
Efficiency ratio	67.68	60.84	
Balance Sheet			
Average			
Trading-related assets:			
Trading account securities	$ 291,505	$ 243,519	20 %
Reverse repurchases	113,989	104,697	9
Securities borrowed	100,292	87,125	15
Derivative assets	43,582	47,655	(9)
Total trading-related assets	549,368	482,996	14
Total loans and leases	91,339	73,062	25
Total earning assets	541,391	482,171	12
Total assets	785,998	685,047	15
Total deposits	51,833	47,400	9
Allocated capital	38,000	36,000	6
Year end			
Total trading-related assets	$ 491,160	$ 421,698	16 %
Total loans and leases	114,846	78,415	46
Total earning assets	561,135	447,350	25
Total assets	747,794	616,609	21
Total deposits	46,374	53,925	(14)

Global Markets offers sales and trading services and research services to institutional clients across fixed-income, credit, currency, commodity and equity businesses. *Global Markets* product coverage includes securities and derivative products in both the primary and secondary markets. *Global Markets* provides market-making, financing, securities clearing, settlement and custody services globally to our institutional investor clients in support of their investing and trading activities. We also work with our commercial and corporate clients to provide risk management products using interest rate, equity, credit, currency and commodity derivatives, foreign exchange, fixed-income and mortgage-related products. As a result of our market-making activities in these products, we may be required to manage risk in a broad range of financial products including government securities, equity and equity-linked securities, high-grade and high-yield corporate debt securities, syndicated loans, MBS, commodities and asset-backed securities. The economics of certain investment banking and underwriting activities are shared primarily between *Global Markets* and *Global Banking* under an internal revenue-sharing arrangement. *Global Banking* originates certain deal-related transactions with our corporate and commercial clients that are executed and distributed by *Global Markets*. For information on investment banking fees on a consolidated basis, see page 82.

The following explanations for year-over-year changes for *Global Markets*, including those disclosed under Sales and Trading Revenue, are the same for amounts including and excluding net DVA. Amounts excluding net DVA are a non-GAAP financial measure. For more information on net DVA, see Supplemental Financial Data on page 70.

Net income for *Global Markets* decreased $695 million to $4.6 billion. Net DVA losses were $54 million compared to losses of $133 million in 2020. Excluding net DVA, net income decreased $755 million to $4.6 billion. These decreases were primarily driven by higher noninterest expense, partially offset by higher revenue and lower provision for credit losses.

Revenue increased $490 million to $19.3 billion primarily driven by higher investment banking fees and sales and trading revenue. Sales and trading revenue increased $172 million, and excluding net DVA, increased $93 million. These increases were driven by higher revenue in Equities, partially offset by lower revenue in FICC.

The provision for credit losses decreased $186 million primarily due to an improved macroeconomic outlook.

Noninterest expense increased $1.6 billion to $13.0 billion primarily driven by higher revenue-related expenses for sales and trading as well as costs associated with processing

transactional card claims related to state unemployment benefits.

Average total assets increased $101.0 billion to $786.0 billion. Year-end total assets increased $131.2 billion to $747.8 billion. Both increases were primarily due to higher client balances in Equities and higher levels of inventory and loan growth in FICC.

The return on average allocated capital was 12 percent, down from 15 percent, reflecting lower net income and an increase in allocated capital. For more information on capital allocated to the business segments, see Business Segment Operations on page 75.

Sales and Trading Revenue

Sales and trading revenue includes unrealized and realized gains and losses on trading and other assets which are included in market making and similar activities, net interest income, and fees primarily from commissions on equity securities. Sales and trading revenue is segregated into fixed-income (government debt obligations, investment and non-investment grade corporate debt obligations, commercial MBS, residential mortgage-backed securities, collateralized loan obligations, interest rate and credit derivative contracts), currencies (interest rate and foreign exchange contracts), commodities (primarily futures, forwards, swaps and options) and equities (equity-linked derivatives and cash equity activity). The following table and related discussion present sales and trading revenue, substantially all of which is in *Global Markets,* with the remainder in *Global Banking*. In addition, the following table and related discussion present sales and trading revenue, excluding net DVA, which is a non-GAAP financial measure. For more information on net DVA, see Supplemental Financial Data on page 70.

Sales and Trading Revenue [1, 2, 3]

(Dollars in millions)	2021	2020
Sales and trading revenue		
Fixed income, currencies and commodities	$ **8,761**	$ 9,595
Equities	**6,428**	5,422
Total sales and trading revenue	$ **15,189**	$ 15,017
Sales and trading revenue, excluding net DVA [4]		
Fixed income, currencies and commodities	$ **8,810**	$ 9,725
Equities	**6,433**	5,425
Total sales and trading revenue, excluding net DVA	$ **15,243**	$ 15,150

(1) For more information on sales and trading revenue, see *Note 3 – Derivatives* to the Consolidated Financial Statements.
(2) Includes FTE adjustments of $421 million and $196 million for 2021 and 2020.
(3) Includes *Global Banking* sales and trading revenue of $510 million and $479 million for 2021 and 2020.
(4) FICC and Equities sales and trading revenue, excluding net DVA, is a non-GAAP financial measure. FICC net DVA losses were $49 million and $130 million for 2021 and 2020. Equities net DVA losses were $5 million and $3 million for 2021 and 2020.

FICC revenue decreased $915 million driven by reduced activity in macro products, partially offset by stronger performance in credit and municipal products, and gains in commodities (partially offset by related losses in another segment) from market volatility driven by a weather-related event in the first quarter of 2021. Equities revenue increased $1.0 billion driven by growth in client financing activities, a stronger trading performance and increased client activity.

All Other

(Dollars in millions)	2021	2020	% Change
Net interest income	$ **246**	$ 34	n/m
Noninterest income (loss)	**(5,589)**	(3,605)	55 %
Total revenue, net of interest expense	**(5,343)**	(3,571)	50
Provision for credit losses	**(182)**	50	n/m
Noninterest expense	**1,519**	1,412	8
Loss before income taxes	**(6,680)**	(5,033)	33
Income tax benefit	**(8,069)**	(4,634)	74
Net income (loss)	$ **1,389**	$ (399)	n/m
Balance Sheet			
Average			
Total loans and leases	$ **18,447**	$ 28,159	(34)%
Total assets [1]	**191,831**	228,783	(16)
Total deposits	**16,512**	18,247	(10)
Year end			
Total loans and leases	$ **15,863**	$ 21,301	(26)%
Total assets [1]	**214,153**	264,141	(19)
Total deposits	**21,182**	12,998	63

(1) In segments where the total of liabilities and equity exceeds assets, which are generally deposit-taking segments, we allocate assets from *All Other* to those segments to match liabilities (i.e., deposits) and allocated shareholders' equity. Average allocated assets were $1.1 trillion and $763.1 billion for 2021 and 2020, and year-end allocated assets were $1.2 trillion and $977.7 billion at December 31, 2021 and 2020.
n/m = not meaningful

All Other primarily consists of ALM activities, liquidating businesses and certain expenses not otherwise allocated to a business segment. ALM activities encompass interest rate and foreign currency risk management activities for which substantially all of the results are allocated to our business segments. For more information on our ALM activities, see *Note 23 – Business Segment Information* to the Consolidated Financial Statements.

Net income increased $1.8 billion to $1.4 billion primarily due to a higher income tax benefit and improvement in the provision for credit losses, partially offset by lower revenue.

Revenue decreased $1.8 billion primarily due to higher partnership losses for ESG investments and a $704 million gain on sales of certain mortgage loans in the prior year.

The provision for credit losses improved $232 million to a benefit of $182 million primarily due to an improved macroeconomic outlook.

Noninterest expense increased $107 million primarily due to higher technology costs and the realignment of a liquidating business activity from *Global Markets* to *All Other* in the fourth quarter of 2021, partially offset by lower litigation expense. For more information on realignment of the business activity, see *Note 23 – Business Segment Information* to the Consolidated Financial Statements.

The income tax benefit was $8.1 billion in 2021 compared to a benefit of $4.6 billion in 2020. The increase in the tax benefit was primarily driven by the impact of U.K. tax law changes and increased income tax credits in 2021. For more information on U.K. tax law changes, see Financial Highlights – Income Tax Expense on page 68. Both years included income tax benefit adjustments to eliminate the FTE treatment of certain tax credits recorded in *Global Banking*.

Managing Risk

Risk is inherent in all our business activities. Sound risk management enables us to serve our customers and deliver for our shareholders. If not managed well, risk can result in financial loss, regulatory sanctions and penalties, and damage to our reputation, each of which may adversely impact our ability to execute our business strategies. We take a comprehensive approach to risk management with a defined Risk Framework and an articulated Risk Appetite Statement, which are approved annually by the ERC and the Board.

The seven key types of risk faced by the Corporation are strategic, credit, market, liquidity, compliance, operational and reputational.

- Strategic risk is the risk to current or projected financial condition arising from incorrect assumptions about external or internal factors, inappropriate business plans, ineffective business strategy execution or failure to respond in a timely manner to changes in the regulatory, macroeconomic or competitive environments in the geographic locations in which we operate.
- Credit risk is the risk of loss arising from the inability or failure of a borrower or counterparty to meet its obligations.
- Market risk is the risk that changes in market conditions adversely impact the value of assets or liabilities or otherwise negatively impact earnings. Market risk is composed of price risk and interest rate risk.
- Liquidity risk is the inability to meet expected or unexpected cash flow and collateral needs while continuing to support our businesses and customers under a range of economic conditions.
- Compliance risk is the risk of legal or regulatory sanctions, material financial loss or damage to the reputation of the Corporation arising from the failure of the Corporation to comply with the requirements of applicable laws, rules and regulations and our internal policies and procedures.
- Operational risk is the risk of loss resulting from inadequate or failed internal processes or systems, people or external events.
- Reputational risk is the risk that negative perception of the Corporation may adversely impact profitability or operations.

The following sections address in more detail the specific procedures, measures and analyses of the major categories of risk. This discussion of managing risk focuses on the current Risk Framework that, as part of its annual review process, was approved by the ERC and the Board.

As set forth in our Risk Framework, a culture of managing risk well is fundamental to our values and our purpose, and how we drive Responsible Growth. It requires us to focus on risk in all activities and encourages the necessary mindset and behavior to enable effective risk management and promote sound risk-taking within our risk appetite. Sustaining a culture of managing risk well throughout the organization is critical to the success of the Corporation and is a clear expectation of our executive management team and the Board.

Our Risk Framework serves as the foundation for the consistent and effective management of risks facing the Corporation. The Risk Framework sets forth roles and responsibilities for the management of risk and provides a blueprint for how the Board, through delegation of authority to committees and executive officers, establishes risk appetite and associated limits for our activities.

Executive management assesses, with Board oversight, the risk-adjusted returns of each business. Management reviews and approves the strategic and financial operating plans, as well as the capital plan and Risk Appetite Statement, and recommends them annually to the Board for approval. Our strategic plan takes into consideration return objectives and financial resources, which must align with risk capacity and risk appetite. Management sets financial objectives for each business by allocating capital and setting a target for return on capital for each business. Capital allocations and operating limits are regularly evaluated as part of our overall governance processes as the businesses and the economic environment in which we operate continue to evolve. For more information regarding capital allocations, see Business Segment Operations on page 75.

The Corporation's risk appetite indicates the amount of capital, earnings or liquidity we are willing to put at risk to achieve our strategic objectives and business plans, consistent with applicable regulatory requirements. Our risk appetite provides a common set of measures for senior management and the Board to clearly indicate the level of risk we are willing to take in alignment with our strategic and capital plans and ensure that the Corporation's risk profile remains aligned with our risk appetite. Our risk appetite is formally articulated in the Risk Appetite Statement, which includes both qualitative components and quantitative limits.

Our overall capacity to take risk is limited; therefore, we prioritize the risks we take in order to maintain a strong and flexible financial position so we can withstand challenging economic conditions and take advantage of organic growth opportunities. Therefore, we set objectives and targets for capital and liquidity that are intended to permit us to continue to operate in a safe and sound manner, including during periods of stress.

Our lines of business operate with risk limits (which may include credit, market and/or operational limits, as applicable) that align with the Corporation's risk appetite. Executive management is responsible for tracking and reporting performance measurements as well as any exceptions to guidelines or limits. The Board, and its committees when appropriate, oversee financial performance, execution of the strategic and financial operating plans, adherence to risk appetite limits and the adequacy of internal controls.

For a more detailed discussion of our risk management activities, see the discussion below and pages 88 through 121.

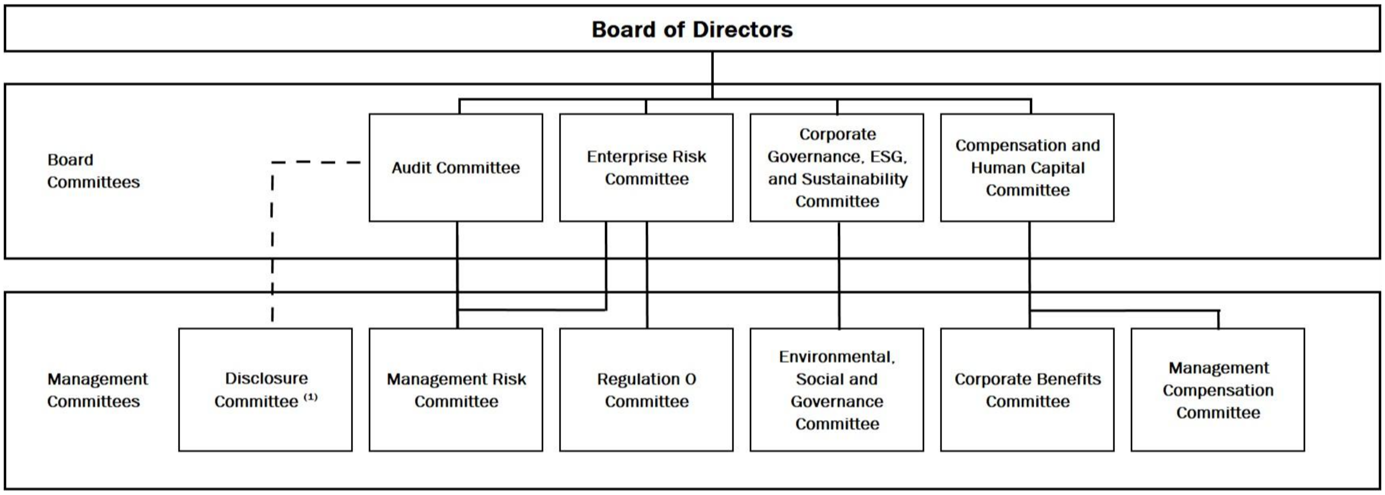
For more information about the Corporation's risks related to the pandemic, see Item 1A. Risk Factors of our 2021 Annual

Report on Form 10-K. These COVID-19 related risks are being managed within our Risk Framework and supporting risk management programs.

Risk Management Governance

The Risk Framework describes delegations of authority whereby the Board and its committees may delegate authority to management-level committees or executive officers. Such delegations may authorize certain decision-making and approval functions, which may be evidenced in documents such as committee charters, job descriptions, meeting minutes and resolutions.

The chart below illustrates the interrelationship among the Board, Board committees and management committees that have the majority of risk oversight responsibilities for the Corporation.



(1) Reports to the CEO and CFO with oversight by the Audit Committee

Board of Directors and Board Committees

The Board is composed of 16 directors, all but one of whom are independent. The Board authorizes management to maintain an effective Risk Framework and oversees compliance with safe and sound banking practices. In addition, the Board or its committees conduct inquiries of, and receive reports from management on, risk-related matters to assess scope or resource limitations that could impede the ability of Global Risk Management (GRM) and/or Corporate Audit to execute its responsibilities. The Board committees discussed below have the principal responsibility for enterprise-wide oversight of our risk management activities. Through these activities, the Board and applicable committees are provided with information on our risk profile and oversee executive management addressing key risks we face. Other Board committees, as described below, provide additional oversight of specific risks.

Each of the committees shown on the above chart regularly reports to the Board on risk-related matters within the committee's responsibilities, which is intended to collectively provide the Board with integrated insight about our management of enterprise-wide risks.

Audit Committee

The Audit Committee oversees the qualifications, performance and independence of the Independent Registered Public Accounting Firm, the performance of our corporate audit function, the integrity of our consolidated financial statements, our compliance with legal and regulatory requirements, and makes inquiries of management or the Chief Audit Executive (CAE) to determine whether there are scope or resource limitations that impede the ability of Corporate Audit to execute its responsibilities. The Audit Committee is also responsible for overseeing compliance risks pursuant to the New York Stock Exchange listing standards.

Enterprise Risk Committee

The ERC has primary responsibility for oversight of the Risk Framework and key risks we face and of the Corporation's overall risk appetite. It approves the Risk Framework and the Risk Appetite Statement and further recommends these documents to the Board for approval. The ERC oversees senior management's responsibilities for the identification, measurement, monitoring and control of key risks we face. The ERC may consult with other Board committees on risk-related matters.

Other Board Committees

Our Corporate Governance, ESG, and Sustainability Committee oversees our Board's governance processes, identifies and reviews the qualifications of potential Board members, recommends nominees for election to our Board, recommends committee appointments for Board approval and reviews our ESG and stockholder engagement activities.

Our Compensation and Human Capital Committee oversees establishing, maintaining and administering our compensation programs and employee benefit plans, including approving and recommending our Chief Executive Officer's (CEO) compensation to our Board for further approval by all independent directors; reviewing and approving our executive officers' compensation, as well as compensation for non-management directors; and reviewing certain other human capital management topics.

Management Committees

Management committees receive their authority from the Board, a Board committee, another management committee or from one or more executive officers. Our primary management risk committee is the MRC. Subject to Board oversight, the MRC is responsible for management oversight of key risks facing the Corporation, including an integrated evaluation of risk, earnings, capital and liquidity.

Lines of Defense

We have clear ownership and accountability for managing risk across three lines of defense: Front Line Units (FLUs), GRM and

Corporate Audit. We also have control functions outside of FLUs and GRM (e.g., Legal and Global Human Resources). The three lines of defense are integrated into our management-level governance structure. Each of these functional roles is further described in this section.

Executive Officers

Executive officers lead various functions representing the functional roles. Authority for functional roles may be delegated to executive officers from the Board, Board committees or management-level committees. Executive officers, in turn, may further delegate responsibilities, as appropriate, to management-level committees, management routines or individuals. Executive officers review our activities for consistency with our Risk Framework, risk appetite, and applicable strategic, capital and financial operating plans, as well as applicable policies and standards. Executive officers and other employees make decisions individually on a day-to-day basis, consistent with the authority they have been delegated. Executive officers and other employees may also serve on committees and participate in committee decisions.

Front Line Units

FLUs, which include the lines of business as well as Global Technology and Global Operations, are responsible for appropriately assessing and effectively managing all of the risks associated with their activities.

Three organizational units that include FLU activities and control function activities, but are not part of GRM are first, the Chief Financial Officer (CFO) Group; second, the Chief Administrative Officer (CAO) Group; and third, Global Strategy and Enterprise Platforms (GSEP).

Global Risk Management

GRM is part of our control functions and operates as our independent risk management function. GRM, led by the Chief Risk Officer (CRO), is responsible for independently assessing and overseeing risks within FLUs and other control functions. GRM establishes written enterprise policies and procedures outlining how aggregate risks are identified, measured, monitored and controlled.

The CRO has the stature, authority and independence needed to develop and implement a meaningful risk management framework and practices to guide the Corporation in managing risk. The CRO has unrestricted access to the Board and reports directly to both the ERC and the CEO. GRM is organized into horizontal risk teams that cover a specific risk area and vertical CRO teams that cover a particular FLU or control function. These teams work collaboratively in executing their respective duties.

Corporate Audit

Corporate Audit and the CAE maintain their independence from the FLUs, GRM and other control functions by reporting directly to the Audit Committee. The CAE administratively reports to the CEO. Corporate Audit provides independent assessment and validation through testing of key processes and controls across the Corporation. Corporate Audit includes Credit Review, which provides an independent assessment of credit lending decisions and the effectiveness of credit processes across the Corporation’s credit platform through examinations and monitoring.

Risk Management Processes

The Risk Framework requires that strong risk management practices are integrated in key strategic, capital and financial planning processes and in day-to-day business processes across the Corporation, thereby ensuring risks are appropriately considered, evaluated and responded to in a timely manner. We employ an effective risk management process, referred to as Identify, Measure, Monitor and Control, as part of our daily activities.

Identify – To be effectively managed, risks must be proactively identified and well understood. Proper risk identification focuses on recognizing and understanding key risks inherent in our business activities or key risks that may arise from external factors. Each employee is expected to identify and escalate risks promptly. Risk identification is an ongoing process that incorporates input from FLUs and control functions. It is designed to be forward-looking and to capture relevant risk factors across all of our lines of business.

Measure – Once a risk is identified, it must be prioritized and accurately measured through a systematic process including quantitative and qualitative components. Risk is measured at various levels, including, but not limited to, risk type, FLU and legal entity, and also on an aggregate basis. This risk measurement process helps to capture changes in our risk profile due to changes in strategic direction, concentrations, portfolio quality and the overall economic environment. Senior management considers how risk exposures might evolve under a variety of stress scenarios.

Monitor – We monitor risk levels regularly to track adherence to risk appetite, policies and standards. We also regularly update risk assessments and review risk exposures. Through our monitoring, we know our level of risk relative to limits and can take action in a timely manner. We also know when risk limits are breached and have processes to appropriately report and escalate exceptions. This includes timely requests for approval to managers and alerts to executive management, management-level committees or the Board (directly or through an appropriate committee).

Control – We establish and communicate risk limits and controls through policies, standards, procedures and processes. The limits and controls can be adjusted by the Board or management when conditions or risk tolerances warrant. These limits may be absolute (e.g., loan amount, trading volume, operational loss) or relative (e.g., percentage of loan book in higher-risk categories). Our FLUs are held accountable for performing within the established limits.

The formal processes used to manage risk represent a part of our overall risk management process. We instill a strong and comprehensive culture of managing risk well through communications, training, policies, procedures and organizational roles and responsibilities. Establishing a culture reflective of our purpose to help make our customers’ financial lives better and delivering on Responsible Growth is also critical to effective risk management. We are committed to the highest principles of ethical and professional conduct. Conduct risk is the risk of improper actions, behaviors or practices that are illegal, unethical and/or contrary to our core values that could result in harm to the Corporation, our shareholders or our customers, damage the integrity of the financial markets, or negatively impact our reputation. We have established protocols and structures so that conduct risk is governed and reported across the Corporation appropriately. All employees are held accountable for adhering to the Code of Conduct, operating within our risk appetite and managing risk in their daily business activities. In addition, our performance management and compensation practices encourage responsible risk-taking that is consistent with our Risk Framework and risk appetite.

Corporation-wide Stress Testing

Integral to our Capital Planning, Financial Planning and Strategic Planning processes, we conduct capital scenario management and stress forecasting on a periodic basis to better understand balance sheet, earnings and capital sensitivities to certain economic and business scenarios, including economic and market conditions that are more severe than anticipated. These stress forecasts provide an understanding of the potential impacts from our risk profile on the balance sheet, earnings and capital, and serve as a key component of our capital and risk management practices. The intent of stress testing is to develop a comprehensive understanding of potential impacts of on- and off-balance sheet risks at the Corporation and certain subsidiaries and how they impact financial resiliency, which provides confidence to management, regulators and our investors.

Contingency Planning

We have developed and maintain contingency plans that are designed to prepare us in advance to respond in the event of potential adverse economic, financial or market stress. These contingency plans include our Capital Contingency Plan and Financial Contingency and Recovery Plan, which provide monitoring, escalation, actions and routines designed to enable us to increase capital, access funding sources and reduce risk through consideration of potential options that include asset sales, business sales, capital or debt issuances, or other de-risking strategies. We also maintain a Resolution Plan to limit adverse systemic impacts that could be associated with a potential resolution of Bank of America.

Strategic Risk Management

Strategic risk is embedded in every business and is one of the major risk categories along with credit, market, liquidity, compliance, operational and reputational risks. This risk results from incorrect assumptions about external or internal factors, inappropriate business plans, ineffective business strategy execution, or failure to respond in a timely manner to changes in the regulatory, macroeconomic or competitive environments in the geographic locations in which we operate, such as competitor actions, changing customer preferences, product obsolescence and technology developments. Our strategic plan is consistent with our risk appetite, capital plan and liquidity requirements, and specifically addresses strategic risks.

On an annual basis, the Board reviews and approves the strategic plan, capital plan, financial operating plan and Risk Appetite Statement. With oversight by the Board, executive management directs the lines of business to execute our strategic plan consistent with our core operating principles and risk appetite. The executive management team monitors business performance throughout the year and provides the Board with regular progress reports on whether strategic objectives and timelines are being met, including reports on strategic risks and if additional or alternative actions need to be considered or implemented. The regular executive reviews focus on assessing forecasted earnings and returns on capital, the current risk profile, current capital and liquidity requirements, staffing levels and changes required to support the strategic plan, stress testing results, and other qualitative factors such as market growth rates and peer analysis.

Significant strategic actions, such as capital actions, material acquisitions or divestitures, and resolution plans are reviewed and approved by the Board. At the business level, processes are in place to discuss the strategic risk implications of new, expanded or modified businesses, products or services and other strategic initiatives, and to provide formal review and approval where required. With oversight by the Board and the ERC, executive management performs similar analyses throughout the year, and evaluates changes to the financial forecast or the risk, capital or liquidity positions as deemed appropriate to balance and optimize achieving the targeted risk appetite, shareholder returns and maintaining the targeted financial strength. Proprietary models are used to measure the capital requirements for credit, country, market, operational and strategic risks. The allocated capital assigned to each business is based on its unique risk profile. With oversight by the Board, executive management assesses the risk-adjusted returns of each business in approving strategic and financial operating plans. The businesses use allocated capital to define business strategies, and price products and transactions.

Capital Management

The Corporation manages its capital position so that its capital is more than adequate to support its business activities and aligns with risk, risk appetite and strategic planning. Additionally, we seek to maintain safety and soundness at all times, even under adverse scenarios, take advantage of organic growth opportunities, meet obligations to creditors and counterparties, maintain ready access to financial markets, continue to serve as a credit intermediary, remain a source of strength for our subsidiaries, and satisfy current and future regulatory capital requirements. Capital management is integrated into our risk and governance processes, as capital is a key consideration in the development of our strategic plan, risk appetite and risk limits.

We conduct an Internal Capital Adequacy Assessment Process (ICAAP) on a periodic basis. The ICAAP is a forward-looking assessment of our projected capital needs and resources, incorporating earnings, balance sheet and risk forecasts under baseline and adverse economic and market conditions. We utilize periodic stress tests to assess the potential impacts to our balance sheet, earnings, regulatory capital and liquidity under a variety of stress scenarios. We perform qualitative risk assessments to identify and assess material risks not fully captured in our forecasts or stress tests. We assess the potential capital impacts of proposed changes to regulatory capital requirements. Management assesses ICAAP results and provides documented quarterly assessments of the adequacy of our capital guidelines and capital position to the Board or its committees.

We periodically review capital allocated to our businesses and allocate capital annually during the strategic and capital planning processes. For more information, see Business Segment Operations on page 75.

CCAR and Capital Planning

The Federal Reserve requires BHCs to submit a capital plan and planned capital actions on an annual basis, consistent with the rules governing the Comprehensive Capital Analysis and Review (CCAR) capital plan. Based on the results of our 2021 CCAR capital plan and related supervisory stress tests, we are subject to a 2.5 percent stress capital buffer (SCB), unchanged from the prior level, effective October 1, 2021 through September 30, 2022. Our Common equity tier 1 (CET1) capital ratio under the Standardized approach must remain above 9.5 percent during this period in order to avoid restrictions on capital distributions and discretionary bonus payments.

Due to uncertainty resulting from the pandemic, the Federal Reserve imposed various restrictions on share repurchase programs and dividends during 2020 and the first half of 2021.

In conjunction with its release of 2021 CCAR supervisory stress test results, the Federal Reserve announced those restrictions would end as of July 1, 2021 for large banks, including the Corporation, and large banks would be subject to the normal restrictions under the Federal Reserve's SCB framework. On October 20, 2021, we announced that the Board renewed the Corporation’s $25 billion common stock repurchase program previously announced in April 2021. The Board’s authorization replaced the previous program. As with the April authorization, the Board also authorized common stock repurchases to offset shares awarded under the Corporation’s equity-based compensation plans. Pursuant to the Board’s authorization, during 2021 we repurchased $25.1 billion of common stock, including repurchases to offset shares awarded under equity-based compensation plans.

The timing and amount of common stock repurchases made pursuant to our stock repurchase program are subject to various factors, including the Corporation’s capital position, liquidity, financial performance and alternative uses of capital, stock trading price, regulatory requirements and general market conditions, and may be suspended at any time. Such repurchases may be effected through open market purchases or privately negotiated transactions, including repurchase plans that satisfy the conditions of Rule 10b5-1 of the Securities Exchange Act of 1934, as amended (Exchange Act).

Regulatory Capital

As a financial services holding company, we are subject to regulatory capital rules, including Basel 3, issued by U.S. banking regulators. Basel 3 established minimum capital ratios and buffer requirements and outlined two methods of calculating risk-weighted assets (RWA), the Standardized approach and the Advanced approaches. The Standardized approach relies primarily on supervisory risk weights based on exposure type, and the Advanced approaches determine risk weights based on internal models.

The Corporation's depository institution subsidiaries are also subject to the Prompt Corrective Action (PCA) framework. The Corporation and its primary affiliated banking entity, BANA, are Advanced approaches institutions under Basel 3 and are required to report regulatory risk-based capital ratios and RWA under both the Standardized and Advanced approaches. The approach that yields the lower ratio is used to assess capital adequacy, including under the PCA framework. As of December 31, 2021, the CET1, Tier 1 capital and Total capital ratios for the Corporation were lower under the Standardized approach.

Minimum Capital Requirements

In order to avoid restrictions on capital distributions and discretionary bonus payments, the Corporation must meet risk-based capital ratio requirements that include a capital conservation buffer of 2.5 percent (under the Advanced approaches only), an SCB (under the Standardized approach only), plus any applicable countercyclical capital buffer and a global systemically important bank (G-SIB) surcharge. Including a regulatory minimum requirement of 4.5 percent, an SCB of 2.5 percent and a G-SIB surcharge of 2.5 percent, the Corporation's CET1 capital ratio must be a minimum of 9.5 percent under both the Standardized and Advanced approaches.

The Corporation is required to calculate its G-SIB surcharge on an annual basis under two methods and is subject to the higher of the resulting two surcharges. Method 1 is consistent with the approach prescribed by the Basel Committee’s assessment methodology and is calculated using specified indicators of systemic importance. Method 2 modifies the Method 1 approach by, among other factors, including a measure of the Corporation’s reliance on short-term wholesale funding. The Corporation’s G-SIB surcharge, which is higher under Method 2, is expected to increase to 3.0 percent on January 1, 2024 unless its surcharge calculated as of December 31, 2022 is lower than 3.0 percent.

The current SCB of 2.5 percent, which remains effective from October 1, 2021 through September 30, 2022, could change based on results of the 2022 CCAR capital plan and related supervisory stress tests to be submitted in the first half of 2022.

The Corporation is also required to maintain a minimum supplementary leverage ratio (SLR) of 3.0 percent plus a leverage buffer of 2.0 percent in order to avoid certain restrictions on capital distributions and discretionary bonus payments. Our insured depository institution subsidiaries are required to maintain a minimum 6.0 percent SLR to be considered well capitalized under the PCA framework. The numerator of the SLR is quarter-end Basel 3 Tier 1 capital. The denominator is total leverage exposure based on the daily average of the sum of on-balance sheet exposures less permitted deductions, and applicable temporary exclusions, as well as the simple average of certain off-balance sheet exposures, as of the end of each month in a quarter. The temporary exclusions expired after March 31, 2021 and were not applicable for December 31, 2021. For more information, see Capital Management – Regulatory Developments on page 93.

Capital Composition and Ratios

Table 10 presents Bank of America Corporation’s capital ratios and related information in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2021 and 2020. For the periods presented herein, the Corporation met the definition of well capitalized under current regulatory requirements.

Table 10 Bank of America Corporation Regulatory Capital under Basel 3

(Dollars in millions, except as noted)	Standardized Approach (1)	Advanced Approaches (1)	Regulatory Minimum (2)
	December 31, 2021		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 171,759	$ 171,759	
Tier 1 capital	196,465	196,465	
Total capital (3)	227,592	220,616	
Risk-weighted assets (in billions)	1,618	1,399	
Common equity tier 1 capital ratio	10.6 %	12.3 %	9.5 %
Tier 1 capital ratio	12.1	14.0	11.0
Total capital ratio	14.1	15.8	13.0
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) (4)	$ 3,087	$ 3,087	
Tier 1 leverage ratio	6.4 %	6.4 %	4.0
Supplementary leverage exposure (in billions) (5)		$ 3,604	
Supplementary leverage ratio		5.5 %	5.0
	December 31, 2020		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 176,660	$ 176,660	
Tier 1 capital	200,096	200,096	
Total capital (3)	237,936	227,685	
Risk-weighted assets (in billions)	1,480	1,371	
Common equity tier 1 capital ratio	11.9 %	12.9 %	9.5 %
Tier 1 capital ratio	13.5	14.6	11.0
Total capital ratio	16.1	16.6	13.0
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) (4)	$ 2,719	$ 2,719	
Tier 1 leverage ratio	7.4 %	7.4 %	4.0
Supplementary leverage exposure (in billions) (5)		$ 2,786	
Supplementary leverage ratio		7.2 %	5.0

(1) Capital ratios as of December 31, 2021 and 2020 are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of the current expected credit losses (CECL) accounting standard.

(2) The capital conservation buffer and G-SIB surcharge were 2.5 percent at both December 31, 2021 and 2020. At both December 31, 2021 and 2020, the Corporation's SCB of 2.5 percent was applied in place of the capital conservation buffer under the Standardized approach. The countercyclical capital buffer for both periods was zero. The CET1 capital regulatory minimum is the sum of the CET1 capital ratio minimum of 4.5 percent, our G-SIB surcharge of 2.5 percent and our SCB or the capital conservation buffer, as applicable, of 2.5 percent. The SLR regulatory minimum includes a leverage buffer of 2.0 percent.

(3) Total capital under the Advanced approaches differs from the Standardized approach due to differences in the amount permitted in Tier 2 capital related to the qualifying allowance for credit losses.

(4) Reflects total average assets adjusted for certain Tier 1 capital deductions.

(5) Supplementary leverage exposure at December 31, 2020 reflects the temporary exclusion of U.S. Treasury securities and deposits at Federal Reserve Banks. The temporary relief expired after March 31, 2021 and is not reflected in supplementary leverage exposure at December 31, 2021.

At December 31, 2021, CET1 capital was $171.8 billion, a decrease of $4.9 billion from December 31, 2020, driven by common stock repurchases, dividends and decreases in net unrealized gains on available-for-sale (AFS) debt securities included in accumulated other comprehensive income (OCI), partially offset by earnings. Tier 1 capital decreased $3.6 billion primarily driven by the same factors as CET1 capital, partially offset by non-cumulative perpetual preferred stock issuances. Total capital under the Standardized approach decreased $10.3 billion primarily due to the same factors driving the decrease in CET1 capital, and a decrease in the adjusted allowance for credit losses included in Tier 2 capital. RWA under the Standardized approach, which yielded the lower CET1 capital ratio at December 31, 2021, increased $138.1 billion during 2021 to $1,618 billion primarily due to loan growth in *Global Banking,* strong client activity in *Global Markets* and an increase in debt securities resulting from the deployment of cash received from deposit inflows. Supplementary leverage exposure at December 31, 2021 increased $818.1 billion during 2021 primarily due to the expiration of the Federal Reserve's temporary relief to exclude U.S. Treasury securities and deposits at Federal Reserve Banks and an increase in debt securities resulting from the deployment of cash received from deposit inflows.

Table 11 shows the capital composition at December 31, 2021 and 2020.

Table 11 Capital Composition under Basel 3

(Dollars in millions)	December 31 2021	2020
Total common shareholders' equity	$ 245,358	$ 248,414
CECL transitional amount [(1)]	2,508	4,213
Goodwill, net of related deferred tax liabilities	(68,641)	(68,565)
Deferred tax assets arising from net operating loss and tax credit carryforwards	(7,743)	(5,773)
Intangibles, other than mortgage servicing rights, net of related deferred tax liabilities	(1,605)	(1,617)
Defined benefit pension plan net assets	(1,261)	(1,164)
Cumulative unrealized net (gain) loss related to changes in fair value of financial liabilities attributable to own creditworthiness, net-of-tax	1,400	1,753
Accumulated net (gain) loss on certain cash flow hedges [(2)]	1,870	(436)
Other	(127)	(165)
Common equity tier 1 capital	171,759	176,660
Qualifying preferred stock, net of issuance cost	24,707	23,437
Other	(1)	(1)
Tier 1 capital	196,465	200,096
Tier 2 capital instruments	20,750	22,213
Qualifying allowance for credit losses [(3)]	10,534	15,649
Other	(157)	(22)
Total capital under the Standardized approach	227,592	237,936
Adjustment in qualifying allowance for credit losses under the Advanced approaches [(3)]	(6,976)	(10,251)
Total capital under the Advanced approaches	$ 220,616	$ 227,685

(1) Includes the impact of the Corporation's adoption of the CECL accounting standard on January 1, 2020 and 25 percent of the increase in reserves since the initial adoption.
(2) Includes amounts in accumulated other comprehensive income related to the hedging of items that are not recognized at fair value on the Consolidated Balance Sheet.
(3) Includes the impact of transition provisions related to the CECL accounting standard.

Table 12 shows the components of RWA as measured under Basel 3 at December 31, 2021 and 2020.

Table 12 Risk-weighted Assets under Basel 3

(Dollars in billions)	Standardized Approach	Advanced Approaches	Standardized Approach	Advanced Approaches
	December 31			
	2021		2020	
Credit risk	$ 1,549	$ 913	$ 1,420	$ 896
Market risk	69	69	60	60
Operational risk	n/a	378	n/a	372
Risks related to credit valuation adjustments	n/a	39	n/a	43
Total risk-weighted assets	$ 1,618	$ 1,399	$ 1,480	$ 1,371

n/a = not applicable

Bank of America, N.A. Regulatory Capital

Table 13 presents regulatory capital information for BANA in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2021 and 2020. BANA met the definition of well capitalized under the PCA framework for both periods.

Table 13 Bank of America, N.A. Regulatory Capital under Basel 3

(Dollars in millions, except as noted)	Standardized Approach (1)	Advanced Approaches (1)	Regulatory Minimum (2)
	December 31, 2021		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 182,526	$ 182,526	
Tier 1 capital	182,526	182,526	
Total capital (3)	194,773	188,091	
Risk-weighted assets (in billions)	1,352	1,048	
Common equity tier 1 capital ratio	13.5 %	17.4 %	7.0 %
Tier 1 capital ratio	13.5	17.4	8.5
Total capital ratio	14.4	17.9	10.5
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) (4)	$ 2,414	$ 2,414	
Tier 1 leverage ratio	7.6 %	7.6 %	5.0
Supplementary leverage exposure (in billions)		$ 2,824	
Supplementary leverage ratio		6.5 %	6.0
	December 31, 2020		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 164,593	$ 164,593	
Tier 1 capital	164,593	164,593	
Total capital (3)	181,370	170,922	
Risk-weighted assets (in billions)	1,221	1,014	
Common equity tier 1 capital ratio	13.5 %	16.2 %	7.0 %
Tier 1 capital ratio	13.5	16.2	8.5
Total capital ratio	14.9	16.9	10.5
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) (4)	$ 2,143	$ 2,143	
Tier 1 leverage ratio	7.7 %	7.7 %	5.0
Supplementary leverage exposure (in billions)		$ 2,525	
Supplementary leverage ratio		6.5 %	6.0

(1) Capital ratios for both December 31, 2021 and 2020 are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of CECL.
(2) Risk-based capital regulatory minimums at both December 31, 2021 and 2020 are the minimum ratios under Basel 3 including a capital conservation buffer of 2.5 percent. The regulatory minimums for the leverage ratios as of both period ends are the percent required to be considered well capitalized under the PCA framework.
(3) Total capital under the Advanced approaches differs from the Standardized approach due to differences in the amount permitted in Tier 2 capital related to the qualifying allowance for credit losses.
(4) Reflects total average assets adjusted for certain Tier 1 capital deductions.

Total Loss-Absorbing Capacity Requirements

Total loss-absorbing capacity (TLAC) consists of the Corporation’s Tier 1 capital and eligible long-term debt issued directly by the Corporation. Eligible long-term debt for TLAC ratios is comprised of unsecured debt that has a remaining maturity of at least one year and satisfies additional requirements as prescribed in the TLAC final rule. As with the risk-based capital ratios and SLR, the Corporation is required to maintain TLAC ratios in excess of minimum requirements plus applicable buffers to avoid restrictions on capital distributions and discretionary bonus payments. Table 14 presents the Corporation's TLAC and long-term debt ratios and related information as of December 31, 2021 and 2020.

Table 14 Bank of America Corporation Total Loss-Absorbing Capacity and Long-Term Debt

(Dollars in millions)	TLAC (1)	Regulatory Minimum (2)	Long-term Debt	Regulatory Minimum (3)
	December 31, 2021			
Total eligible balance	$ 435,904		$ 227,714	
Percentage of risk-weighted assets (4)	26.9 %	22.0 %	14.1 %	8.5 %
Percentage of supplementary leverage exposure (5)	12.1	9.5	6.3	4.5
	December 31, 2020			
Total eligible balance	$ 405,153		$ 196,997	
Percentage of risk-weighted assets (4)	27.4 %	22.0 %	13.3 %	8.5 %
Percentage of supplementary leverage exposure (5)	14.5	9.5	7.1	4.5

(1) As of December 31, 2021 and 2020, TLAC ratios are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of CECL.
(2) The TLAC RWA regulatory minimum consists of 18.0 percent plus a TLAC RWA buffer comprised of 2.5 percent plus the Method 1 G-SIB surcharge of 1.5 percent. The countercyclical buffer is zero for both periods. The TLAC supplementary leverage exposure regulatory minimum consists of 7.5 percent plus a 2.0 percent TLAC leverage buffer. The TLAC RWA and leverage buffers must be comprised solely of CET1 capital and Tier 1 capital, respectively.
(3) The long-term debt RWA regulatory minimum is comprised of 6.0 percent plus an additional 2.5 percent requirement based on the Corporation's Method 2 G-SIB surcharge. The long-term debt leverage exposure regulatory minimum is 4.5 percent.
(4) The approach that yields the higher RWA is used to calculate TLAC and long-term debt ratios, which was the Standardized approach as of December 31, 2021 and 2020.
(5) Supplementary leverage exposure at December 31, 2020 reflects the temporary exclusion of U.S. Treasury Securities and deposits at Federal Reserve Banks. The temporary relief expired after March 31, 2021 and is not reflected in supplementary leverage exposure at December 31, 2021.

Regulatory Developments

Supplementary Leverage Ratio

On March 19, 2021, U.S. banking regulators announced that temporary changes issued in 2020 for BHCs and depository institutions would expire as scheduled after March 31, 2021. These temporary changes to the SLR allowed the exclusion of on-balance sheet amounts of U.S. Treasury securities and deposits at Federal Reserve Banks from the calculation of supplementary leverage exposure. While the temporary relief automatically applied to the Corporation, the Corporation's lead depository institution, Bank of America, N.A., did not opt to take advantage of the SLR relief offered by the OCC. At December 31, 2021, the Corporation's SLR was 5.5 percent, which exceeds the 5.0 percent minimum required by the Federal Reserve.

Regulatory Capital and Securities Regulation

The Corporation's principal U.S. broker-dealer subsidiaries are BofA Securities, Inc. (BofAS), Merrill Lynch Professional Clearing Corp. (MLPCC) and Merrill Lynch, Pierce, Fenner & Smith Incorporated (MLPF&S). The Corporation's principal European broker-dealer subsidiaries are Merrill Lynch International (MLI) and BofA Securities Europe SA (BofASE).

The U.S. broker-dealer subsidiaries are subject to the net capital requirements of Rule 15c3-1 under the Exchange Act. BofAS computes its minimum capital requirements as an alternative net capital broker-dealer under Rule 15c3-1e, and MLPCC and MLPF&S compute their minimum capital requirements in accordance with the alternative standard under Rule 15c3-1. BofAS and MLPCC are also registered as futures commission merchants and are subject to Commodity Futures Trading Commission (CFTC) Regulation 1.17. The U.S. broker-dealer subsidiaries are also registered with the Financial Industry Regulatory Authority, Inc. (FINRA). Pursuant to FINRA Rule 4110, FINRA may impose higher net capital requirements than Rule 15c3-1 under the Exchange Act with respect to each of the broker-dealers.

BofAS provides institutional services, and in accordance with the alternative net capital requirements, is required to maintain tentative net capital in excess of $5.0 billion and net capital in excess of the greater of $1.0 billion or a certain percentage of its reserve requirement in addition to a certain percentage of securities-based swap risk margin. BofAS must also notify the SEC in the event its tentative net capital is less than $6.0 billion. BofAS is also required to hold a certain percentage of its customers' and affiliates' risk-based margin in order to meet its CFTC minimum net capital requirement. At December 31, 2021, BofAS had tentative net capital of $19.4 billion. BofAS also had regulatory net capital of $16.6 billion, which exceeded the minimum requirement of $3.5 billion.

MLPCC is a fully-guaranteed subsidiary of BofAS and provides clearing and settlement services as well as prime brokerage and arranged financing services for institutional clients. At December 31, 2021, MLPCC's regulatory net capital of $6.2 billion exceeded the minimum requirement of $1.5 billion.

MLPF&S provides retail services. At December 31, 2021, MLPF&S' regulatory net capital was $5.7 billion, which exceeded the minimum requirement of $199 million.

Our European broker-dealers are regulated by non-U.S. regulators. MLI, a U.K. investment firm, is regulated by the Prudential Regulation Authority and the Financial Conduct Authority and is subject to certain regulatory capital requirements. At December 31, 2021, MLI's capital resources were $33.6 billion, which exceeded the minimum Pillar 1 requirement of $14.0 billion. BofASE, a French investment firm, is regulated by the Autorité de Contrôle Prudentiel et de Résolution and the Autorité des Marchés Financiers, and is subject to certain regulatory capital requirements. At December 31, 2021, BofASE's capital resources were $7.9 billion, which exceeded the minimum Pillar 1 requirement of $2.8 billion.

Liquidity Risk

Funding and Liquidity Risk Management

Our primary liquidity risk management objective is to meet expected or unexpected cash flow and collateral requirements, including payments under long-term debt agreements, commitments to extend credit and customer deposit withdrawals, while continuing to support our businesses and customers under a range of economic conditions. To achieve that objective, we analyze and monitor our liquidity risk under expected and stressed conditions, maintain liquidity and access to diverse funding sources, including our stable deposit base, and seek to align liquidity-related incentives and risks. These liquidity risk management practices have allowed us to effectively manage the market fluctuation from the pandemic. For more information on the risks of the pandemic, see Part I. Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K and Executive Summary – Recent Developments – COVID-19

Pandemic on page 66.

We define liquidity as readily available assets, limited to cash and high-quality, liquid, unencumbered securities that we can use to meet our contractual and contingent financial obligations as they arise. We manage our liquidity position through line-of-business and ALM activities, as well as through our legal entity funding strategy, on both a forward and current (including intraday) basis under both expected and stressed conditions. We believe that a centralized approach to funding and liquidity management enhances our ability to monitor liquidity requirements, maximizes access to funding sources, minimizes borrowing costs and facilitates timely responses to liquidity events.

The Board approves our liquidity risk policy and the Financial Contingency and Recovery Plan. The ERC establishes our liquidity risk tolerance levels. The MRC is responsible for overseeing liquidity risks and directing management to maintain exposures within the established tolerance levels. The MRC reviews and monitors our liquidity position and stress testing results, approves certain liquidity risk limits and reviews the impact of strategic decisions on our liquidity. For more information, see Managing Risk on page 85. Under this governance framework, we developed certain funding and liquidity risk management practices which include: maintaining liquidity at the parent company and selected subsidiaries, including our bank subsidiaries and other regulated entities; determining what amounts of liquidity are appropriate for these entities based on analysis of debt maturities and other potential cash outflows, including those that we may experience during stressed market conditions; diversifying funding sources, considering our asset profile and legal entity structure; and performing contingency planning.

NB Holdings Corporation

The parent company, which is a separate and distinct legal entity from our bank and nonbank subsidiaries, has an intercompany arrangement with our wholly-owned holding company subsidiary, NB Holdings Corporation (NB Holdings). We have transferred, and agreed to transfer, additional parent company assets not required to satisfy anticipated near-term expenditures to NB Holdings. The parent company is expected to continue to have access to the same flow of dividends, interest and other amounts of cash necessary to service its debt, pay dividends and perform other obligations as it would have had it not entered into these arrangements and transferred any assets. These arrangements support our preferred single point of entry resolution strategy, under which only the parent company would be resolved under the U.S. Bankruptcy Code.

In consideration for the transfer of assets, NB Holdings issued a subordinated note to the parent company in a principal amount equal to the value of the transferred assets. The aggregate principal amount of the note will increase by the amount of any future asset transfers. NB Holdings also provided the parent company with a committed line of credit that allows the parent company to draw funds necessary to service near-term cash needs. These arrangements support our preferred single point of entry resolution strategy, under which only the parent company would be resolved under the U.S. Bankruptcy Code. These arrangements include provisions to terminate the line of credit, forgive the subordinated note and require the parent company to transfer its remaining financial assets to NB Holdings if our projected liquidity resources deteriorate so severely that resolution of the parent company becomes imminent.

Global Liquidity Sources and Other Unencumbered Assets

We maintain liquidity available to the Corporation, including the parent company and selected subsidiaries, in the form of cash and high-quality, liquid, unencumbered securities. Our liquidity buffer, referred to as Global Liquidity Sources (GLS), is comprised of assets that are readily available to the parent company and selected subsidiaries, including holding company, bank and broker-dealer subsidiaries, even during stressed market conditions. Our cash is primarily on deposit with the Federal Reserve Bank and, to a lesser extent, central banks outside of the U.S. We limit the composition of high-quality, liquid, unencumbered securities to U.S. government securities, U.S. agency securities, U.S. agency MBS and other investment-grade securities, and a select group of non-U.S. government securities. We can obtain cash for these securities, even in stressed conditions, through repurchase agreements or outright sales. We hold our GLS in legal entities that allow us to meet the liquidity requirements of our global businesses, and we consider the impact of potential regulatory, tax, legal and other restrictions that could limit the transferability of funds among entities.

Table 15 presents average GLS for the three months ended December 31, 2021 and 2020.

Table 15 Average Global Liquidity Sources

	Three Months Ended December 31	
(Dollars in billions)	**2021**	2020
Bank entities	**$ 1,006**	$ 773
Nonbank and other entities [1]	**152**	170
Total Average Global Liquidity Sources	**$ 1,158**	$ 943

[1] Nonbank includes Parent, NB Holdings and other regulated entities.

Our bank subsidiaries' liquidity is primarily driven by deposit and lending activity, as well as securities valuation and net debt activity. Bank subsidiaries can also generate incremental liquidity by pledging a range of unencumbered loans and securities to certain FHLBs and the Federal Reserve Discount Window. The cash we could have obtained by borrowing against this pool of specifically-identified eligible assets was $322 billion and $306 billion at December 31, 2021 and 2020. We have established operational procedures to enable us to borrow against these assets, including regularly monitoring our total pool of eligible loans and securities collateral. Eligibility is defined in guidelines from the FHLBs and the Federal Reserve and is subject to change at their discretion. Due to regulatory restrictions, liquidity generated by the bank subsidiaries can generally be used only to fund obligations within the bank subsidiaries, and transfers to the parent company or nonbank subsidiaries may be subject to prior regulatory approval.

Liquidity is also held in nonbank entities, including the Parent, NB Holdings and other regulated entities. Parent company and NB Holdings liquidity is typically in the form of cash deposited at BANA, which is excluded from the liquidity at bank subsidiaries, and high-quality, liquid, unencumbered securities. Liquidity held in other regulated entities, comprised primarily of broker-dealer subsidiaries, is primarily available to meet the obligations of that entity, and transfers to the parent company or to any other subsidiary may be subject to prior regulatory approval due to regulatory restrictions and minimum requirements. Our other regulated entities also hold unencumbered investment-grade securities and equities that we believe could be used to generate additional liquidity.

Table 16 presents the composition of average GLS for the three months ended December 31, 2021 and 2020.

Table 16 Average Global Liquidity Sources Composition

	Three Months Ended December 31	
(Dollars in billions)	**2021**	2020
Cash on deposit	**$ 259**	$ 322
U.S. Treasury securities	**278**	141
U.S. agency securities, mortgage-backed securities, and other investment-grade securities	**606**	462
Non-U.S. government securities	**15**	18
Total Average Global Liquidity Sources	**$ 1,158**	$ 943

Our GLS are substantially the same in composition to what qualifies as High Quality Liquid Assets (HQLA) under the final U.S. Liquidity Coverage Ratio (LCR) rules. However, HQLA for purposes of calculating LCR is not reported at market value, but at a lower value that incorporates regulatory deductions and the exclusion of excess liquidity held at certain subsidiaries. The LCR is calculated as the amount of a financial institution's unencumbered HQLA relative to the estimated net cash outflows the institution could encounter over a 30-day period of significant liquidity stress, expressed as a percentage. Our average consolidated HQLA, on a net basis, was $617 billion and $584 billion for the three months ended December 31, 2021 and 2020. For the same periods, the average consolidated LCR was 115 percent and 122 percent. Our LCR fluctuates due to normal business flows from customer activity.

Liquidity Stress Analysis

We utilize liquidity stress analysis to assist us in determining the appropriate amounts of liquidity to maintain at the parent company and our subsidiaries to meet contractual and contingent cash outflows under a range of scenarios. The scenarios we consider and utilize incorporate market-wide and Corporation-specific events, including potential credit rating downgrades for the parent company and our subsidiaries, and more severe events including potential resolution scenarios. The scenarios are based on our historical experience, experience of distressed and failed financial institutions, regulatory guidance, and both expected and unexpected future events.

The types of potential contractual and contingent cash outflows we consider in our scenarios may include, but are not limited to, upcoming contractual maturities of unsecured debt and reductions in new debt issuances; diminished access to secured financing markets; potential deposit withdrawals; increased draws on loan commitments, liquidity facilities and letters of credit; additional collateral that counterparties could call if our credit ratings were downgraded; collateral and margin requirements arising from market value changes; and potential liquidity required to maintain businesses and finance customer activities. Changes in certain market factors, including, but not limited to, credit rating downgrades, could negatively impact potential contractual and contingent outflows and the related financial instruments, and in some cases these impacts could be material to our financial results.

We consider all sources of funds that we could access during each stress scenario and focus particularly on matching available sources with corresponding liquidity requirements by legal entity. We also use the stress modeling results to manage our asset and liability profile and establish limits and guidelines on certain funding sources and businesses.

Net Stable Funding Ratio Final Rule

On October 20, 2020, U.S. banking regulators finalized the Net Stable Funding Ratio (NSFR), a rule requiring large banks to maintain a minimum level of stable funding over a one-year period. The final rule is intended to support the ability of banks to lend to households and businesses in both normal and adverse economic conditions and is complementary to the LCR rule, which focuses on short-term liquidity risks. The final rule was effective July 1, 2021, and the Corporation is in compliance. The U.S. NSFR applies to the Corporation on a consolidated basis and to our insured depository institutions. There have not been any significant impacts to the Corporation.

Diversified Funding Sources

We fund our assets primarily with a mix of deposits, and secured and unsecured liabilities through a centralized, globally coordinated funding approach diversified across products, programs, markets, currencies and investor groups.

The primary benefits of our centralized funding approach include greater control, reduced funding costs, wider name recognition by investors and greater flexibility to meet the variable funding requirements of subsidiaries. Where regulations, time zone differences or other business considerations make parent company funding impractical, certain other subsidiaries may issue their own debt.

We fund a substantial portion of our lending activities through our deposits, which were $2.1 trillion and $1.8 trillion at December 31, 2021 and 2020. Deposits are primarily generated by our *Consumer Banking*, *GWIM* and *Global Banking* segments. These deposits are diversified by clients, product type and geography, and the majority of our U.S. deposits are insured by the FDIC. We consider a substantial portion of our deposits to be a stable, low-cost and consistent source of funding. We believe this deposit funding is generally less sensitive to interest rate changes, market volatility or changes in our credit ratings than wholesale funding sources. Our lending activities may also be financed through secured borrowings, including credit card securitizations and securitizations with government-sponsored enterprises (GSE), the Federal Housing Administration (FHA) and private-label investors, as well as FHLB loans.

Our trading activities in other regulated entities are primarily funded on a secured basis through securities lending and repurchase agreements, and these amounts will vary based on customer activity and market conditions. We believe funding these activities in the secured financing markets is more cost-efficient and less sensitive to changes in our credit ratings than unsecured financing. Repurchase agreements are generally short-term and often overnight. Disruptions in secured financing markets for financial institutions have occurred in prior market cycles which resulted in adverse changes in terms or significant reductions in the availability of such financing. We manage the liquidity risks arising from secured funding by sourcing funding globally from a diverse group of counterparties, providing a range of securities collateral and pursuing longer durations, when appropriate. For more information on secured financing agreements, see *Note 10 – Securities Financing Agreements, Short-term Borrowings and Restricted Cash* to the Consolidated Financial Statements.

Total long-term debt increased $17.2 billion to $280.1 billion during 2021, primarily due to debt issuances, partially offset by debt maturities, redemptions and valuation adjustments. We may, from time to time, purchase outstanding debt instruments in various transactions, depending on market conditions, liquidity and other factors. Our other regulated

entities may also make markets in our debt instruments to provide liquidity for investors.

During 2021, we issued $76.7 billion of long-term debt consisting of $56.2 billion of notes issued by Bank of America Corporation, substantially all of which were TLAC compliant, $8.0 billion of notes issued by Bank of America, N.A. and $12.5 billion of other debt. During 2020, we issued $56.9 billion of long-term debt consisting of $43.8 billion of notes issued by Bank of America Corporation, substantially all of which were TLAC compliant, $4.8 billion of notes issued by Bank of America, N.A. and $8.3 billion of other debt.

During 2021, we had total long-term debt maturities and redemptions in the aggregate of $46.4 billion consisting of $24.4 billion for Bank of America Corporation, $10.4 billion for Bank of America, N.A. and $11.6 billion of other debt. During 2020, we had total long-term debt maturities and redemptions in the aggregate of $47.1 billion consisting of $22.6 billion for Bank of America Corporation, $11.5 billion for Bank of America, N.A. and $13.0 billion of other debt.

At December 31, 2021, Bank of America Corporation's senior notes of $212.9 billion included $179.5 billion of outstanding notes that are both TLAC eligible and callable at least one year before their stated maturities. Of these senior notes, $15.0 billion will be callable and become TLAC ineligible during 2022, and $17.0 billion, $17.8 billion, $15.0 billion and $17.7 billion will do so during each of 2023 through 2026, respectively, and $97.0 billion thereafter.

We issue long-term unsecured debt in a variety of maturities and currencies to achieve cost-efficient funding and to maintain an appropriate maturity profile. While the cost and availability of unsecured funding may be negatively impacted by general market conditions or by matters specific to the financial services industry or the Corporation, we seek to mitigate refinancing risk by actively managing the amount of our borrowings that we anticipate will mature within any month or quarter. We may issue unsecured debt in the form of structured notes for client purposes, certain of which qualify as TLAC-eligible debt. During 2021, we issued $7.1 billion of structured notes, which are debt obligations that pay investors returns linked to other debt or equity securities, indices, currencies or commodities. We typically hedge the returns we are obligated to pay on these liabilities with derivatives and/or investments in the underlying instruments, so that from a funding perspective, the cost is similar to our other unsecured long-term debt. We could be required to settle certain structured note obligations for cash or other securities prior to maturity under certain circumstances, which we consider for liquidity planning purposes. We believe, however, that a portion of such borrowings will remain outstanding beyond the earliest put or redemption date.

Substantially all of our senior and subordinated debt obligations contain no provisions that could trigger a requirement for an early repayment, require additional collateral support, result in changes to terms, accelerate maturity or create additional financial obligations upon an adverse change in our credit ratings, financial ratios, earnings, cash flows or stock price. For more information on long-term debt funding, including issuances and maturities and redemptions, see *Note 11 – Long-term Debt* to the Consolidated Financial Statements.

We use derivative transactions to manage the duration, interest rate and currency risks of our borrowings, considering the characteristics of the assets they are funding. For more information on our ALM activities, see Interest Rate Risk Management for the Banking Book on page 118.

Uninsured Deposits

The FDIC insures the Corporation's U.S. deposits up to $250,000 per depositor, per insured bank for each account ownership category, and various country-specific funds insure non-U.S. deposits up to specified limits. Deposits that exceed insurance limits are uninsured. At December 31, 2021, the Corporation's deposits totaled $2.1 trillion, of which total estimated uninsured U.S. and non-U.S. deposits were $701.4 billion and $111.9 billion. At December 31, 2020, the Corporation's deposits totaled $1.8 trillion, of which total estimated uninsured U.S. and non-U.S. deposits were $597.7 billion and $104.1 billion.

Table 17 presents information about the Corporation's total estimated uninsured time deposits. For more information on our liquidity sources, see Global Liquidity Sources and Other Unencumbered Assets, and for more information on deposits, see Diversified Funding Sources in this section. For more information on contractual time deposit maturities, see *Note 9 – Deposits* to the Consolidated Financial Statements.

Table 17 Uninsured Time Deposits [1]

	December 31, 2021		
(Dollars in millions)	U.S.	Non-U.S.	Total
Uninsured time deposits with a maturity of:			
3 months or less	$ 2,337	$ 7,274	**$ 9,611**
Over 3 months through 6 months	1,668	1,663	**3,331**
Over 6 months through 12 months	1,942	239	**2,181**
Over 12 months	289	1,470	**1,759**
Total	$ 6,236	$ 10,646	**$ 16,882**

(1) Amounts are estimated based on the regulatory methodologies defined by each local jurisdiction.

Contingency Planning

We maintain contingency funding plans that outline our potential responses to liquidity stress events at various levels of severity. These policies and plans are based on stress scenarios and include potential funding strategies and communication and notification procedures that we would implement in the event we experienced stressed liquidity conditions. We periodically review and test the contingency funding plans to validate efficacy and assess readiness.

Our U.S. bank subsidiaries can access contingency funding through the Federal Reserve Discount Window. Certain non-U.S. subsidiaries have access to central bank facilities in the jurisdictions in which they operate. While we do not rely on these sources in our liquidity modeling, we maintain the policies, procedures and governance processes that would enable us to access these sources if necessary.

Credit Ratings

Our borrowing costs and ability to raise funds are impacted by our credit ratings. In addition, credit ratings may be important to customers or counterparties when we compete in certain markets and when we seek to engage in certain transactions, including over-the-counter (OTC) derivatives. Thus, it is our objective to maintain high-quality credit ratings, and management maintains an active dialogue with the major rating agencies.

Credit ratings and outlooks are opinions expressed by rating agencies on our creditworthiness and that of our obligations or securities, including long-term debt, short-term borrowings, preferred stock and other securities, including asset securitizations. Our credit ratings are subject to ongoing review

by the rating agencies, and they consider a number of factors, including our own financial strength, performance, prospects and operations as well as factors not under our control. The rating agencies could make adjustments to our ratings at any time, and they provide no assurances that they will maintain our ratings at current levels.

Other factors that influence our credit ratings include changes to the rating agencies' methodologies for our industry or certain security types; the rating agencies' assessment of the general operating environment for financial services companies; our relative positions in the markets in which we compete; our various risk exposures and risk management policies and activities; pending litigation and other contingencies or potential tail risks; our reputation; our liquidity position, diversity of funding sources and funding costs; the current and expected level and volatility of our earnings; our capital position and capital management practices; our corporate governance; the sovereign credit ratings of the U.S. government; current or future regulatory and legislative initiatives; and the agencies' views on whether the U.S. government would provide meaningful support to the Corporation or its subsidiaries in a crisis.

On May 24, 2021, Standard & Poor's Global Ratings (S&P) affirmed the current ratings of the Corporation and its subsidiaries, while at the same time revising its rating outlook to Positive from Stable.

On June 7, 2021, Fitch Ratings (Fitch) upgraded the long-term senior debt ratings of the Corporation and its rated subsidiaries by one notch, to AA- and AA, respectively. Fitch also upgraded the Corporation's short-term rating to F1+ which is now aligned with the short-term rating of its subsidiaries, including BANA. Following the upgrade, the rating outlook for the Corporation and its subsidiaries is Stable.

On November 22, 2021, Moody's Investors Service (Moody's) affirmed the current ratings of the Corporation and its subsidiaries, while at the same time revising its rating outlook to Positive from Stable.

Table 18 presents the Corporation's current long-term/short-term senior debt ratings and outlooks expressed by the rating agencies.

Table 18 Senior Debt Ratings

	Moody's Investors Service			Standard & Poor's Global Ratings			Fitch Ratings		
	Long-term	Short-term	Outlook	Long-term	Short-term	Outlook	Long-term	Short-term	Outlook
Bank of America Corporation	A2	P-1	Positive	A-	A-2	Positive	AA-	F1+	Stable
Bank of America, N.A.	Aa2	P-1	Positive	A+	A-1	Positive	AA	F1+	Stable
Bank of America Europe Designated Activity Company	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable
Merrill Lynch, Pierce, Fenner & Smith Incorporated	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable
BofA Securities, Inc.	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable
Merrill Lynch International	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable
BofA Securities Europe SA	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable

NR = not rated

A reduction in certain of our credit ratings or the ratings of certain asset-backed securitizations may have a material adverse effect on our liquidity, potential loss of access to credit markets, the related cost of funds, our businesses and on certain revenues, particularly in those businesses where counterparty creditworthiness is critical. In addition, under the terms of certain OTC derivative contracts and other trading agreements, in the event of downgrades of our or our rated subsidiaries' credit ratings, the counterparties to those agreements may require us to provide additional collateral, or to terminate these contracts or agreements, which could cause us to sustain losses and/or adversely impact our liquidity. If the short-term credit ratings of our parent company, bank or broker-dealer subsidiaries were downgraded by one or more levels, the potential loss of access to short-term funding sources such as repo financing and the effect on our incremental cost of funds could be material.

While certain potential impacts are contractual and quantifiable, the full scope of the consequences of a credit rating downgrade to a financial institution is inherently uncertain, as it depends upon numerous dynamic, complex and inter-related factors and assumptions, including whether any downgrade of a company's long-term credit ratings precipitates downgrades to its short-term credit ratings, and assumptions about the potential behaviors of various customers, investors and counterparties. For more information on potential impacts of credit rating downgrades, see Liquidity Risk – Liquidity Stress Analysis on page 95.

For more information on additional collateral and termination payments that could be required in connection with certain OTC derivative contracts and other trading agreements as a result of such a credit rating downgrade, see *Note 3 – Derivatives* to the Consolidated Financial Statements and Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

Common Stock Dividends

For a summary of our declared quarterly cash dividends on common stock during 2021 and through February 22, 2022, see *Note 13 – Shareholders' Equity* to the Consolidated Financial Statements.

Finance Subsidiary Issuers and Parent Guarantor

BofA Finance LLC, a Delaware limited liability company (BofA Finance), is a consolidated finance subsidiary of the Corporation that has issued and sold, and is expected to continue to issue and sell, its senior unsecured debt securities (Guaranteed Notes) that are fully and unconditionally guaranteed by the Corporation. The Corporation guarantees the due and punctual payment, on demand, of amounts payable on the Guaranteed Notes if not paid by BofA Finance. In addition, each of BAC Capital Trust XIII, BAC Capital Trust XIV and BAC Capital Trust XV, Delaware statutory trusts (collectively, the Trusts), is a 100 percent owned finance subsidiary of the Corporation that has issued and sold trust preferred securities (the Trust Preferred Securities) or capital securities (the Capital Securities and, together with the Guaranteed Notes and the Trust Preferred Securities, the Guaranteed Securities), as applicable, that remained outstanding at December 31, 2021. The Corporation

guarantees the payment of amounts and distributions with respect to the Trust Preferred Securities and Capital Securities if not paid by the Trusts, to the extent of funds held by the Trusts, and this guarantee, together with the Corporation's other obligations with respect to the Trust Preferred Securities and Capital Securities, effectively constitutes a full and unconditional guarantee of the Trusts' payment obligations on the Trust Preferred Securities or Capital Securities, as applicable. No other subsidiary of the Corporation guarantees the Guaranteed Securities.

BofA Finance and each of the Trusts are finance subsidiaries, have no independent assets, revenues or operations and are dependent upon the Corporation and/or the Corporation's other subsidiaries to meet their respective obligations under the Guaranteed Securities in the ordinary course. If holders of the Guaranteed Securities make claims on their Guaranteed Securities in a bankruptcy, resolution or similar proceeding, any recoveries on those claims will be limited to those available under the applicable guarantee by the Corporation, as described above.

The Corporation is a holding company and depends upon its subsidiaries for liquidity. Applicable laws and regulations and intercompany arrangements entered into in connection with the Corporation's resolution plan could restrict the availability of funds from subsidiaries to the Corporation, which could adversely affect the Corporation's ability to make payments under its guarantees. In addition, the obligations of the Corporation under the guarantees of the Guaranteed Securities will be structurally subordinated to all existing and future liabilities of its subsidiaries, and claimants should look only to assets of the Corporation for payments. If the Corporation, as guarantor of the Guaranteed Notes, transfers all or substantially all of its assets to one or more direct or indirect majority-owned subsidiaries, under the indenture governing the Guaranteed Notes, the subsidiary or subsidiaries will not be required to assume the Corporation's obligations under its guarantee of the Guaranteed Notes.

For more information on factors that may affect payments to holders of the Guaranteed Securities, see Liquidity Risk – NB Holdings Corporation in this section, Item 1. Business of our 2021 Annual Report on Form 10-K and Part I. Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

Representations and Warranties Obligations

For information on representations and warranties obligations in connection with the sale of mortgage loans, see *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

Credit Risk Management

Credit risk is the risk of loss arising from the inability or failure of a borrower or counterparty to meet its obligations. Credit risk can also arise from operational failures that result in an erroneous advance, commitment or investment of funds. We define the credit exposure to a borrower or counterparty as the loss potential arising from all product classifications including loans and leases, deposit overdrafts, derivatives, assets held-for-sale and unfunded lending commitments which include loan commitments, letters of credit and financial guarantees. Derivative positions are recorded at fair value and assets held-for-sale are recorded at either fair value or the lower of cost or fair value. Certain loans and unfunded commitments are accounted for under the fair value option. Credit risk for categories of assets carried at fair value is not accounted for as part of the allowance for credit losses but as part of the fair value adjustments recorded in earnings. For derivative positions, our credit risk is measured as the net cost in the event the counterparties with contracts in which we are in a gain position fail to perform under the terms of those contracts. We use the current fair value to represent credit exposure without giving consideration to future mark-to-market changes. The credit risk amounts take into consideration the effects of legally enforceable master netting agreements and cash collateral. Our consumer and commercial credit extension and review procedures encompass funded and unfunded credit exposures. For more information on derivatives and credit extension commitments, see *Note 3 – Derivatives* and *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

We manage credit risk based on the risk profile of the borrower or counterparty, repayment sources, the nature of underlying collateral and other support given current events, conditions and expectations. We classify our portfolios as either consumer or commercial and monitor credit risk in each as discussed below.

We refine our underwriting and credit risk management practices as well as credit standards to meet the changing economic environment. To mitigate losses and enhance customer support in our consumer businesses, we have in place collection programs and loan modification and customer assistance infrastructures. We utilize a number of actions to mitigate losses in the commercial businesses including increasing the frequency and intensity of portfolio monitoring, hedging activity and our practice of transferring management of deteriorating commercial exposures to independent special asset officers as credits enter criticized categories.

For information on our credit risk management activities, see Consumer Portfolio Credit Risk Management below, Commercial Portfolio Credit Risk Management on page 104, Non-U.S. Portfolio on page 110, Allowance for Credit Losses on page 112, and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements. For more information on the factors that may expose us to credit risk, see Part I. Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

During 2021, the economy gained momentum as unemployment continued to decline from double-digit highs during 2020 and the economy re-opened as vaccination rates increased and restrictions eased. With the easing of restrictions, we saw increased business openings, a rebound to commercial and consumer spending, higher asset values and increased global GDP, all of which positively impacted our consumer and commercial credit portfolios. Additionally, individuals and businesses in the U.S. benefited from various forms of government support through economic stimulus packages enacted in 2020 and 2021, which contributed to strong asset quality across our credit portfolios.

As a result of the economic recovery experienced in 2021, net charge-offs, nonperforming loans and commercial reservable criticized exposure declined compared to 2020. While there has been significant economic improvement in comparison to 2020, uncertainty remains about the timing and strength of the economy's recovery, which may also be hampered by supply chain disruptions and inflationary pressures and could lead to adverse impacts to credit quality metrics in future periods. The pandemic and its full impact on the global economy continue to be highly uncertain. While COVID-19 cases eased throughout the majority of 2021, they reached new highs by the end of 2021, and the spread of new, more contagious variants could impact the magnitude and duration of this health crisis. However,

ongoing virus containment efforts and vaccination progress, could support the macroeconomic recovery.

For more information on how the pandemic may affect our operations, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 66 and Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

Consumer Portfolio Credit Risk Management

Credit risk management for the consumer portfolio begins with initial underwriting and continues throughout a borrower's credit cycle. Statistical techniques in conjunction with experiential judgment are used in all aspects of portfolio management including underwriting, product pricing, risk appetite, setting credit limits, and establishing operating processes and metrics to quantify and balance risks and returns. Statistical models are built using detailed behavioral information from external sources such as credit bureaus and/or internal historical experience and are a component of our consumer credit risk management process. These models are used in part to assist in making both new and ongoing credit decisions, as well as portfolio management strategies, including authorizations and line management, collection practices and strategies, and determination of the allowance for loan and lease losses and allocated capital for credit risk.

Consumer Credit Portfolio

The economic environment improved during 2021, with the U.S. unemployment rate continuing to decline and home prices increasing. During 2021, net charge-offs decreased $805 million to $1.8 billion primarily due to lower credit card losses, as the impact of government stimulus measures were partially offset by charge-offs associated with deferrals that expired in 2020. During 2021, nonperforming loans increased due to deferral activity.

The consumer allowance for loan and lease losses decreased $3.0 billion in 2021 to $7.0 billion primarily due to improvements in the macroeconomic outlook and credit quality. For more information, see Allowance for Credit Losses on page 112.

For more information on our accounting policies regarding delinquencies, nonperforming status, charge-offs and troubled debt restructurings (TDRs) for the consumer portfolio, as well as interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements.

Table 19 presents our outstanding consumer loans and leases, consumer nonperforming loans and accruing consumer loans past due 90 days or more.

Table 19 Consumer Credit Quality

	Outstandings		Nonperforming		Accruing Past Due 90 Days or More	
	December 31					
(Dollars in millions)	**2021**	2020	**2021**	2020	**2021**	2020
Residential mortgage [(1)]	**$ 221,963**	$ 223,555	**$ 2,284**	$ 2,005	**$ 634**	$ 762
Home equity	**27,935**	34,311	**630**	649	**—**	—
Credit card	**81,438**	78,708	**n/a**	n/a	**487**	903
Direct/Indirect consumer [(2)]	**103,560**	91,363	**75**	71	**11**	33
Other consumer	**190**	124	**—**	—	**—**	—
Consumer loans excluding loans accounted for under the fair value option	**$ 435,086**	$ 428,061	**$ 2,989**	$ 2,725	**$ 1,132**	$ 1,698
Loans accounted for under the fair value option [(3)]	**618**	735				
Total consumer loans and leases	**$ 435,704**	$ 428,796				
Percentage of outstanding consumer loans and leases [(4)]	**n/a**	n/a	**0.69 %**	0.64 %	**0.26 %**	0.40 %
Percentage of outstanding consumer loans and leases, excluding fully-insured loan portfolios [(4)]	**n/a**	n/a	**0.71**	0.65	**0.12**	0.22

(1) Residential mortgage loans accruing past due 90 days or more are fully-insured loans. At December 31, 2021 and 2020, residential mortgage includes $444 million and $537 million of loans on which interest had been curtailed by the FHA, and therefore were no longer accruing interest, although principal was still insured, and $190 million and $225 million of loans on which interest was still accruing.

(2) Outstandings primarily include auto and specialty lending loans and leases of $48.5 billion and $46.4 billion, U.S. securities-based lending loans of $51.1 billion and $41.1 billion and non-U.S. consumer loans of $3.0 billion and $3.0 billion at December 31, 2021 and 2020.

(3) For more information on the fair value option, see *Note 21 – Fair Value Option* to the Consolidated Financial Statements.

(4) Excludes consumer loans accounted for under the fair value option. At December 31, 2021 and 2020, $21 million and $11 million of loans accounted for under the fair value option were past due 90 days or more and not accruing interest.

n/a = not applicable

Table 20 presents net charge-offs and related ratios for consumer loans and leases.

Table 20 Consumer Net Charge-offs and Related Ratios

	Net Charge-offs		Net Charge-off Ratios [(1)]	
(Dollars in millions)	**2021**	2020	**2021**	2020
Residential mortgage	**$ (28)**	$ (30)	**(0.01)%**	(0.01)%
Home equity	**(119)**	(73)	**(0.39)**	(0.19)
Credit card	**1,723**	2,349	**2.29**	2.76
Direct/Indirect consumer	**1**	122	**—**	0.14
Other consumer	**270**	284	**n/m**	n/m
Total	**$ 1,847**	$ 2,652	**0.44**	0.59

(1) Net charge-off ratios are calculated as net charge-offs divided by average outstanding loans and leases excluding loans accounted for under the fair value option.

n/m = not meaningful

We believe that the presentation of information adjusted to exclude the impact of the fully-insured loan portfolio and loans accounted for under the fair value option is more representative of the ongoing operations and credit quality of the business. As a result, in the following tables and discussions of the residential mortgage and home equity portfolios, we exclude loans accounted for under the fair value option and provide information that excludes the impact of the fully-insured loan portfolio in certain credit quality statistics.

Residential Mortgage

The residential mortgage portfolio made up the largest percentage of our consumer loan portfolio at 51 percent of consumer loans and leases in 2021. Approximately 52 percent of the residential mortgage portfolio was in *Consumer Banking* and 43 percent was in *GWIM.* The remaining portion was in *All Other*.

Outstanding balances in the residential mortgage portfolio decreased $1.6 billion in 2021 as paydowns were partially offset by originations.

At December 31, 2021 and 2020, the residential mortgage portfolio included $12.7 billion and $11.8 billion of outstanding fully-insured loans, of which $2.2 billion and $2.8 billion had FHA insurance, with the remainder protected by Fannie Mae long-term standby agreements.

Table 21 presents certain residential mortgage key credit statistics on both a reported basis and excluding the fully-insured loan portfolio. The following discussion presents the residential mortgage portfolio excluding the fully-insured loan portfolio.

Table 21 Residential Mortgage – Key Credit Statistics

	Reported Basis (1)		Excluding Fully-insured Loans (1)	
	December 31			
(Dollars in millions)	**2021**	2020	**2021**	2020
Outstandings	**$ 221,963**	$ 223,555	**$ 209,259**	$ 211,737
Accruing past due 30 days or more	**1,753**	2,314	**866**	1,224
Accruing past due 90 days or more	**634**	762	**—**	—
Nonperforming loans (2)	**2,284**	2,005	**2,284**	2,005
Percent of portfolio				
Refreshed LTV greater than 90 but less than or equal to 100	**1%**	2 %	**1%**	1 %
Refreshed LTV greater than 100	**—**	1	**—**	1
Refreshed FICO below 620	**2**	2	**1**	1

(1) Outstandings, accruing past due, nonperforming loans and percentages of portfolio exclude loans accounted for under the fair value option. For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

(2) Includes loans that are contractually current which primarily consist of collateral-dependent TDRs, including those that have been discharged in Chapter 7 bankruptcy and loans that have not yet demonstrated a sustained period of payment performance following a TDR.

Nonperforming outstanding balances in the residential mortgage portfolio increased $279 million in 2021 primarily driven by deferral activity. Of the nonperforming residential mortgage loans at December 31, 2021, $1.2 billion, or 51 percent, were current on contractual payments. Loans accruing past due 30 days or more decreased $358 million driven by continued improvement in credit quality.

Net recoveries of $28 million in 2021 remained relatively unchanged compared to 2020.

Of the $209.3 billion in total residential mortgage loans outstanding at December 31, 2021, 27 percent were originated as interest-only loans. The outstanding balance of interest-only residential mortgage loans that have entered the amortization period was $4.8 billion, or eight percent, at December 31, 2021. Residential mortgage loans that have entered the amortization period generally experienced a higher rate of early stage delinquencies and nonperforming status compared to the residential mortgage portfolio as a whole. At December 31, 2021, $66 million, or one percent, of outstanding interest-only residential mortgages that had entered the amortization period were accruing past due 30 days or more compared to $866 million, or less than one percent, for the entire residential mortgage portfolio. In addition, at December 31, 2021, $275 million, or six percent, of outstanding interest-only residential mortgage loans that had entered the amortization period were nonperforming, of which $83 million were contractually current compared to $2.3 billion, or one percent, for the entire residential mortgage portfolio. Loans that have yet to enter the amortization period in our interest-only residential mortgage portfolio are primarily well-collateralized loans to our wealth management clients and have an interest-only period of three to ten years. Approximately 91 percent of these loans that have yet to enter the amortization period will not be required to make a fully-amortizing payment until 2025 or later.

Table 22 presents outstandings, nonperforming loans and net charge-offs by certain state concentrations for the residential mortgage portfolio. The Los Angeles-Long Beach-Santa Ana Metropolitan Statistical Area (MSA) within California represented 15 percent and 16 percent of outstandings at December 31, 2021 and 2020. In the New York area, the New York-Northern New Jersey-Long Island MSA made up 15 percent and 14 percent of outstandings at December 31, 2021 and 2020.

Table 22 Residential Mortgage State Concentrations

(Dollars in millions)	Outstandings (1) 2021	Outstandings (1) 2020	Nonperforming (1) 2021	Nonperforming (1) 2020	Net Charge-offs 2021	Net Charge-offs 2020
	December 31					
California	$ 77,819	$ 83,185	$ 693	$ 570	$ (14)	$ (18)
New York	24,975	23,832	358	272	3	3
Florida	13,883	13,017	158	175	(8)	(5)
Texas	9,002	8,868	86	78	—	—
New Jersey	8,723	8,806	117	98	—	(1)
Other	74,857	74,029	872	812	(9)	(9)
Residential mortgage loans	$ 209,259	$ 211,737	$ 2,284	$ 2,005	$ (28)	$ (30)
Fully-insured loan portfolio	12,704	11,818				
Total residential mortgage loan portfolio	$ 221,963	$ 223,555				

(1) Outstandings and nonperforming loans exclude loans accounted for under the fair value option.

Home Equity

At December 31, 2021, the home equity portfolio made up six percent of the consumer portfolio and was comprised of home equity lines of credit (HELOCs), home equity loans and reverse mortgages. HELOCs generally have an initial draw period of 10 years, and after the initial draw period ends, the loans generally convert to 15- or 20-year amortizing loans. We no longer originate home equity loans or reverse mortgages.

At December 31, 2021, 80 percent of the home equity portfolio was in *Consumer Banking*, 11 percent was in *All Other* and the remainder of the portfolio was primarily in *GWIM*. Outstanding balances in the home equity portfolio decreased $6.4 billion in 2021 primarily due to paydowns outpacing new originations and draws on existing lines. Of the total home equity portfolio at December 31, 2021 and 2020, $12.2 billion, or 44 percent, and $13.8 billion, or 40 percent, were in first-lien positions. At December 31, 2021, outstanding balances in the home equity portfolio that were in a second-lien or more junior-lien position and where we also held the first-lien loan totaled $4.6 billion, or 16 percent of our total home equity portfolio.

Unused HELOCs totaled $40.5 billion and $42.3 billion at December 31, 2021 and 2020. The HELOC utilization rate was 39 percent and 43 percent at December 31, 2021 and 2020.

Table 23 presents certain home equity portfolio key credit statistics.

Table 23 Home Equity – Key Credit Statistics (1)

(Dollars in millions)	December 31 2021	December 31 2020
Outstandings	$ 27,935	$ 34,311
Accruing past due 30 days or more	157	186
Nonperforming loans (2)	630	649
Percent of portfolio		
Refreshed CLTV greater than 90 but less than or equal to 100	—%	1 %
Refreshed CLTV greater than 100	1	1
Refreshed FICO below 620	3	3

(1) Outstandings, accruing past due, nonperforming loans and percentages of the portfolio exclude loans accounted for under the fair value option. For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

(2) Includes loans that are contractually current which primarily consist of collateral-dependent TDRs, including those that have been discharged in Chapter 7 bankruptcy, junior-lien loans where the underlying first lien is 90 days or more past due, as well as loans that have not yet demonstrated a sustained period of payment performance following a TDR.

Nonperforming outstanding balances in the home equity portfolio remained relatively flat at $630 million at December 31, 2021. Of the nonperforming home equity loans at December 31, 2021, $227 million, or 36 percent, were current on contractual payments. In addition, $273 million, or 43 percent of nonperforming home equity loans were 180 days or more past due and had been written down to the estimated fair value of the collateral, less costs to sell. Accruing loans that were 30 days or more past due decreased $29 million in 2021.

Net recoveries increased $46 million to $119 million in 2021 compared to the same period in 2020. The increase was driven by favorable portfolio trends due in part to improvement in home prices.

Of the $27.9 billion in total home equity portfolio outstandings at December 31, 2021, as shown in Table 23, 14 percent require interest-only payments. The outstanding balance of HELOCs that have reached the end of their draw period and have entered the amortization period was $6.8 billion at December 31, 2021. The HELOCs that have entered the amortization period have experienced a higher percentage of early stage delinquencies and nonperforming status when compared to the HELOC portfolio as a whole. At December 31, 2021, $105 million, or two percent, of outstanding HELOCs that had entered the amortization period were accruing past due 30 days or more. In addition, at December 31, 2021, $455 million, or seven percent, were nonperforming. Loans that have yet to enter the amortization period in our interest-only portfolio are primarily post-2008 vintages and generally have better credit quality than the previous vintages that had entered the amortization period. We communicate to contractually current customers more than a year prior to the end of their draw period to inform them of the potential change to the payment structure before entering the amortization period, and provide payment options to customers prior to the end of the draw period.

Although we do not actively track how many of our home equity customers pay only the minimum amount due on their home equity loans and lines, we can infer some of this information through a review of our HELOC portfolio that we service and that is still in its revolving period. During 2021, nine percent of these customers with an outstanding balance did not pay any principal on their HELOCs.

Table 24 presents outstandings, nonperforming balances and net recoveries by certain state concentrations for the home equity portfolio. In the New York area, the New York-Northern New Jersey-Long Island MSA made up 13 percent of the outstanding home equity portfolio at both December 31, 2021 and 2020. The Los Angeles-Long Beach-Santa Ana MSA within California made up 10 percent and 11 percent of the outstanding home equity portfolio at December 31, 2021 and 2020.

Table 24 Home Equity State Concentrations

	Outstandings [1]		Nonperforming [1]		Net Recoveries	
	December 31					
(Dollars in millions)	**2021**	2020	**2021**	2020	**2021**	2020
California	**$ 7,600**	$ 9,488	**$ 140**	$ 143	**$ (40)**	$ (26)
Florida	**2,977**	3,715	**78**	80	**(21)**	(11)
New Jersey	**2,259**	2,749	**69**	67	**(4)**	(3)
New York	**2,072**	2,495	**96**	103	**(1)**	(1)
Massachusetts	**1,422**	1,719	**32**	32	**(3)**	(1)
Other	**11,605**	14,145	**215**	224	**(50)**	(31)
Total home equity loan portfolio	**$ 27,935**	$ 34,311	**$ 630**	$ 649	**$ (119)**	$ (73)

(1) Outstandings and nonperforming loans exclude loans accounted for under the fair value option.

Credit Card

At December 31, 2021, 97 percent of the credit card portfolio was managed in *Consumer Banking* with the remainder in *GWIM*. Outstandings in the credit card portfolio increased $2.7 billion in 2021 to $81.4 billion due to higher retail spend. Net charge-offs decreased $626 million to $1.7 billion during 2021 compared to the same period in 2020 due to the impact of government stimulus measures, partially offset by charge-offs of certain loans with deferrals that expired in 2020. Credit card loans 30 days or more past due and still accruing interest decreased $692 million, and loans 90 days or more past due and still accruing interest decreased $416 million primarily due to charge-offs of certain loans with deferrals that expired in 2020 and the impact of government stimulus measures.

Unused lines of credit for credit card increased to $361.2 billion at December 31, 2021 from $342.4 billion at 2020.

Table 25 presents certain state concentrations for the credit card portfolio.

Table 25 Credit Card State Concentrations

	Outstandings		Accruing Past Due 90 Days or More [1]		Net Charge-offs	
	December 31					
(Dollars in millions)	**2021**	2020	**2021**	2020	2021	2020
California	**$ 13,076**	$ 12,543	**$ 82**	$ 166	**$ 322**	$ 419
Florida	**8,046**	7,666	**71**	135	**245**	306
Texas	**6,894**	6,499	**47**	87	**158**	202
New York	**4,725**	4,654	**35**	76	**135**	188
Washington	**4,080**	3,685	**13**	21	**39**	56
Other	**44,617**	43,661	**239**	418	**824**	1,178
Total credit card portfolio	**$ 81,438**	$ 78,708	**$ 487**	$ 903	**$ 1,723**	$ 2,349

(1) For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Direct/Indirect Consumer

At December 31, 2021, 47 percent of the direct/indirect portfolio was included in *Consumer Banking* (consumer auto and recreational vehicle lending) and 53 percent was included in *GWIM* (principally securities-based lending loans). Outstandings in the direct/indirect portfolio increased by $12.2 billion in 2021 to $103.6 billion driven by client demand for liquidity and high asset values in the securities-based lending portfolio.

Table 26 presents certain state concentrations for the direct/indirect consumer loan portfolio.

Table 26 Direct/Indirect State Concentrations

	Outstandings		Accruing Past Due 90 Days or More [1]		Net Charge-offs	
	December 31					
(Dollars in millions)	**2021**	2020	**2021**	2020	**2021**	2020
California	**$ 15,061**	$ 12,248	**$ 2**	$ 6	**$ 3**	$ 20
Florida	**13,352**	10,891	**1**	4	**1**	20
Texas	**9,505**	8,981	**2**	6	**2**	20
New York	**7,802**	6,609	**1**	2	**3**	9
New Jersey	**4,228**	3,572	**—**	—	**(3)**	2
Other	**53,612**	49,062	**5**	15	**(5)**	51
Total direct/indirect loan portfolio	**$ 103,560**	$ 91,363	**$ 11**	$ 33	**$ 1**	$ 122

(1) For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity

Table 27 presents nonperforming consumer loans, leases and foreclosed properties activity during 2021 and 2020. During 2021, nonperforming consumer loans increased $264 million to $3.0 billion primarily driven by consumer real estate deferral activity.

At December 31, 2021, $888 million, or 30 percent of nonperforming loans were 180 days or more past due and had been written down to their estimated property value less costs to sell. In addition, at December 31, 2021, $1.4 billion, or 48 percent of nonperforming consumer loans were modified and are now current after successful trial periods, or are current loans classified as nonperforming loans in accordance with applicable policies.

Foreclosed properties decreased $22 million in 2021 to $101 million. Nonperforming loans also include certain loans that have been modified in TDRs where economic concessions have been granted to borrowers experiencing financial difficulties.

Table 27 Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity

(Dollars in millions)	**2021**	2020
Nonperforming loans and leases, January 1	**$ 2,725**	$ 2,053
Additions	**2,006**	2,278
Reductions:		
Paydowns and payoffs	**(625)**	(440)
Sales	**(4)**	(38)
Returns to performing status [1]	**(1,037)**	(1,014)
Charge-offs	**(64)**	(78)
Transfers to foreclosed properties	**(12)**	(36)
Total net additions to nonperforming loans and leases	**264**	672
Total nonperforming loans and leases, December 31	**2,989**	2,725
Foreclosed properties, December 31 [2]	**101**	123
Nonperforming consumer loans, leases and foreclosed properties, December 31	**$ 3,090**	$ 2,848
Nonperforming consumer loans and leases as a percentage of outstanding consumer loans and leases [3]	**0.69 %**	0.64 %
Nonperforming consumer loans, leases and foreclosed properties as a percentage of outstanding consumer loans, leases and foreclosed properties [3]	**0.71**	0.66

(1) Consumer loans may be returned to performing status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected, or when the loan otherwise becomes well-secured and is in the process of collection.
(2) Foreclosed property balances do not include properties insured by certain government-guaranteed loans, principally FHA-insured, of $52 million and $119 million at December 31, 2021 and 2020.
(3) Outstanding consumer loans and leases exclude loans accounted for under the fair value option.

Table 28 presents TDRs for the consumer real estate portfolio. Performing TDR balances are excluded from nonperforming loans and leases in Table 27.

Table 28 Consumer Real Estate Troubled Debt Restructurings

	December 31, 2021			December 31, 2020		
(Dollars in millions)	Nonperforming	Performing	Total	Nonperforming	Performing	Total
Residential mortgage [1, 2]	$ 1,498	$ 2,278	$ 3,776	$ 1,195	$ 2,899	$ 4,094
Home equity [3]	254	652	906	248	836	1,084
Total consumer real estate troubled debt restructurings	**$ 1,752**	**$ 2,930**	**$ 4,682**	$ 1,443	$ 3,735	$ 5,178

(1) At December 31, 2021 and 2020, residential mortgage TDRs deemed collateral dependent totaled $1.6 billion and $1.4 billion, and included $1.4 billion and $1.0 billion of loans classified as nonperforming and $279 million and $361 million of loans classified as performing.
(2) At December 31, 2021 and 2020, residential mortgage performing TDRs include $1.2 billion and $1.5 billion of loans that were fully-insured.
(3) At December 31, 2021 and 2020, home equity TDRs deemed collateral dependent totaled $370 million and $407 million, and include $222 million and $216 million of loans classified as nonperforming and $148 million and $191 million of loans classified as performing.

In addition to modifying consumer real estate loans, we work with customers who are experiencing financial difficulty by modifying credit card and other consumer loans. Credit card and other consumer loan modifications generally involve a reduction in the customer's interest rate on the account and placing the customer on a fixed payment plan not exceeding 60 months.

Modifications of credit card and other consumer loans are made through programs utilizing direct customer contact, but may also utilize external programs. At December 31, 2021 and 2020, our credit card and other consumer TDR portfolio was $672 million and $701 million, of which $599 million and $614 million were current or less than 30 days past due under the modified terms.

Commercial Portfolio Credit Risk Management

Credit risk management for the commercial portfolio begins with an assessment of the credit risk profile of the borrower or counterparty based on an analysis of its financial position. As part of the overall credit risk assessment, our commercial credit exposures are assigned a risk rating and are subject to approval based on defined credit approval standards. Subsequent to loan origination, risk ratings are monitored on an ongoing basis, and if necessary, adjusted to reflect changes in the financial condition, cash flow, risk profile or outlook of a borrower or counterparty. In making credit decisions, we consider risk rating, collateral, country, industry and single-name concentration limits while also balancing these considerations with the total borrower or counterparty relationship. We use a variety of tools to continuously monitor the ability of a borrower or counterparty to perform under its obligations. We use risk rating aggregations to measure and evaluate concentrations within portfolios. In addition, risk ratings are a factor in determining the level of allocated capital and the allowance for credit losses.

As part of our ongoing risk mitigation initiatives, we attempt to work with clients experiencing financial difficulty to modify their loans to terms that better align with their current ability to pay. In situations where an economic concession has been granted to a borrower experiencing financial difficulty, we identify these loans as TDRs. For more information on our accounting policies regarding delinquencies, nonperforming status and net charge-offs for the commercial portfolio, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Management of Commercial Credit Risk Concentrations

Commercial credit risk is evaluated and managed with the goal that concentrations of credit exposure continue to be aligned with our risk appetite. We review, measure and manage concentrations of credit exposure by industry, product, geography, customer relationship and loan size. We also review, measure and manage commercial real estate loans by geographic location and property type. In addition, within our non-U.S. portfolio, we evaluate exposures by region and by country. Tables 33, 36 and 39 summarize our concentrations. We also utilize syndications of exposure to third parties, loan sales, hedging and other risk mitigation techniques to manage the size and risk profile of the commercial credit portfolio. For more information on our industry concentrations, see Commercial Portfolio Credit Risk Management – Industry Concentrations on page 108 and Table 36.

We account for certain large corporate loans and loan commitments, including issued but unfunded letters of credit which are considered utilized for credit risk management purposes, that exceed our single-name credit risk concentration guidelines under the fair value option. Lending commitments, both funded and unfunded, are actively managed and monitored, and as appropriate, credit risk for these lending relationships may be mitigated through the use of credit derivatives, with our credit view and market perspectives determining the size and timing of the hedging activity. In addition, we purchase credit protection to cover the funded portion as well as the unfunded portion of certain other credit exposures. To lessen the cost of obtaining our desired credit protection levels, credit exposure may be added within an industry, borrower or counterparty group by selling protection. These credit derivatives do not meet the requirements for treatment as accounting hedges. They are carried at fair value with changes in fair value recorded in other income.

In addition, we are a member of various securities and derivative exchanges and clearinghouses, both in the U.S. and other countries. As a member, we may be required to pay a pro-rata share of the losses incurred by some of these organizations as a result of another member default and under other loss scenarios. For more information, see *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

Commercial Credit Portfolio

During 2021, commercial credit quality improved as the economic recovery gained momentum driven in part by increased consumer spending and COVID-19 vaccination progress. Accordingly, charge-offs, nonperforming commercial loans and reservable criticized utilized exposure declined during this period. Outstanding commercial loans and leases increased $44.4 billion during 2021 due to growth in commercial and industrial, primarily in *Global Markets* with most of the increase in investment grade exposures. This increase was partially offset by lower U.S. small business commercial loans due to repayments of PPP loans by the Small Business Administration (SBA) under the terms of the program. For more information on

PPP loans, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Credit quality of commercial real estate borrowers has begun to stabilize in many sectors as economies have reopened. However, certain sectors, including hospitality, while showing signs of improvement, continue to be negatively impacted due to the pandemic. Moreover, many real estate markets, while improving, are still experiencing some disruptions in demand, supply chain challenges and tenant difficulties. Current and future office demand is uncertain as companies evaluate space needs with employment models that utilize a mix of remote and conventional office use.

The commercial allowance for loan and lease losses decreased $3.4 billion during 2021 to $5.4 billion driven by improvements in the macroeconomic outlook and credit quality. For more information, see Allowance for Credit Losses on page 112.

Total commercial utilized credit exposure increased $33.2 billion during 2021 to $653.5 billion primarily driven by higher loans and leases. The utilization rate for loans and leases, standby letters of credit (SBLCs) and financial guarantees, and commercial letters of credit, in the aggregate, was 56 percent at December 31, 2021 and 57 percent at December 31, 2020.

Table 29 presents commercial credit exposure by type for utilized, unfunded and total binding committed credit exposure. Commercial utilized credit exposure includes SBLCs and financial guarantees and commercial letters of credit that have been issued and for which we are legally bound to advance funds under prescribed conditions during a specified time period, and excludes exposure related to trading account assets. Although funds have not yet been advanced, these exposure types are considered utilized for credit risk management purposes.

Table 29 Commercial Credit Exposure by Type

	Commercial Utilized [1]		Commercial Unfunded [2, 3, 4]		Total Commercial Committed	
	December 31					
(Dollars in millions)	**2021**	2020	**2021**	2020	**2021**	2020
Loans and leases	**$ 543,420**	$ 499,065	**$ 454,256**	$ 404,740	**$ 997,676**	$ 903,805
Derivative assets [5]	**35,344**	47,179	**—**	—	**35,344**	47,179
Standby letters of credit and financial guarantees	**34,389**	34,616	**639**	538	**35,028**	35,154
Debt securities and other investments	**19,427**	22,618	**4,638**	4,827	**24,065**	27,445
Loans held-for-sale	**13,185**	8,378	**16,581**	9,556	**29,766**	17,934
Operating leases	**5,935**	6,424	**—**	—	**5,935**	6,424
Commercial letters of credit	**1,176**	855	**247**	280	**1,423**	1,135
Other	**652**	1,168	**—**	—	**652**	1,168
Total	**$ 653,528**	$ 620,303	**$ 476,361**	$ 419,941	**$ 1,129,889**	$ 1,040,244

(1) Commercial utilized exposure includes loans of $7.2 billion and $5.9 billion accounted for under the fair value option at December 31, 2021 and 2020.
(2) Commercial unfunded exposure includes commitments accounted for under the fair value option with a notional amount of $4.8 billion and $3.9 billion at December 31, 2021 and 2020.
(3) Excludes unused business card lines, which are not legally binding.
(4) Includes the notional amount of unfunded legally binding lending commitments net of amounts distributed (i.e., syndicated or participated) to other financial institutions. The distributed amounts were $10.7 billion and $10.5 billion at December 31, 2021 and 2020.
(5) Derivative assets are carried at fair value, reflect the effects of legally enforceable master netting agreements and have been reduced by cash collateral of $30.8 billion and $42.5 billion at December 31, 2021 and 2020. Not reflected in utilized and committed exposure is additional non-cash derivative collateral held of $44.8 billion and $39.3 billion at December 31, 2021 and 2020, which consists primarily of other marketable securities.

Nonperforming commercial loans decreased $649 million. Table 30 presents our commercial loans and leases portfolio and related credit quality information at December 31, 2021 and 2020.

Table 30 Commercial Credit Quality

	Outstandings		Nonperforming		Accruing Past Due 90 Days or More	
	December 31					
(Dollars in millions)	**2021**	2020	**2021**	2020	**2021**	2020
Commercial and industrial:						
U.S. commercial	**$ 325,936**	$ 288,728	**$ 825**	$ 1,243	**$ 171**	$ 228
Non-U.S. commercial	**113,266**	90,460	**268**	418	**19**	10
Total commercial and industrial	**439,202**	379,188	**1,093**	1,661	**190**	238
Commercial real estate	**63,009**	60,364	**382**	404	**40**	6
Commercial lease financing	**14,825**	17,098	**80**	87	**8**	25
	517,036	456,650	**1,555**	2,152	**238**	269
U.S. small business commercial [1]	**19,183**	36,469	**23**	75	**87**	115
Commercial loans excluding loans accounted for under the fair value option	**$ 536,219**	**$ 493,119**	**$ 1,578**	**$ 2,227**	**$ 325**	**$ 384**
Loans accounted for under the fair value option [2]	**7,201**	5,946				
Total commercial loans and leases	**$ 543,420**	$ 499,065				

(1) Includes card-related products.
(2) Commercial loans accounted for under the fair value option include U.S. commercial of $4.6 billion and $2.9 billion and non-U.S. commercial of $2.6 billion and $3.0 billion at December 31, 2021 and 2020. For more information on the fair value option, see *Note 21 – Fair Value Option* to the Consolidated Financial Statements.

Table 31 presents net charge-offs and related ratios for our commercial loans and leases for 2021 and 2020.

Table 31 Commercial Net Charge-offs and Related Ratios

(Dollars in millions)	Net Charge-offs 2021	Net Charge-offs 2020	Net Charge-off Ratios [1] 2021	Net Charge-off Ratios [1] 2020
Commercial and industrial:				
U.S. commercial	**$ (23)**	$ 718	**(0.01)%**	0.23%
Non-U.S. commercial	**35**	155	**0.04**	0.15
Total commercial and industrial	**12**	873	**—**	0.21
Commercial real estate	**34**	270	**0.06**	0.43
Commercial lease financing	**(1)**	59	**—**	0.32
	45	1,202	**0.01**	0.24
U.S. small business commercial	**351**	267	**1.19**	0.86
Total commercial	**$ 396**	$ 1,469	**0.08**	0.28

(1) Net charge-off ratios are calculated as net charge-offs divided by average outstanding loans and leases excluding loans accounted for under the fair value option.

Table 32 presents commercial reservable criticized utilized exposure by loan type. Criticized exposure corresponds to the Special Mention, Substandard and Doubtful asset categories as defined by regulatory authorities. Total commercial reservable criticized utilized exposure decreased $16.3 billion during 2021, which was broad-based across industries. At December 31, 2021 and 2020, 87 percent and 79 percent of commercial reservable criticized utilized exposure was secured.

Table 32 Commercial Reservable Criticized Utilized Exposure [1, 2]

(Dollars in millions)	December 31 2021		2020	
Commercial and industrial:				
U.S. commercial	**$ 11,327**	**3.20 %**	$ 21,388	6.83%
Non-U.S. commercial	**2,582**	**2.17**	5,051	5.03
Total commercial and industrial	**13,909**	**2.94**	26,439	6.40
Commercial real estate	**7,572**	**11.72**	10,213	16.42
Commercial lease financing	**387**	**2.61**	714	4.18
	21,868	**3.96**	37,366	7.59
U.S. small business commercial	**513**	**2.67**	1,300	3.56
Total commercial reservable criticized utilized exposure	**$ 22,381**	**3.91**	$ 38,666	7.31

(1) Total commercial reservable criticized utilized exposure includes loans and leases of $21.2 billion and $36.6 billion and commercial letters of credit of $1.2 billion and $2.1 billion at December 31, 2021 and 2020.
(2) Percentages are calculated as commercial reservable criticized utilized exposure divided by total commercial reservable utilized exposure for each exposure category.

Commercial and Industrial

Commercial and industrial loans include U.S. commercial and non-U.S. commercial portfolios.

U.S. Commercial

At December 31, 2021, 62 percent of the U.S. commercial loan portfolio, excluding small business, was managed in *Global Banking,* 22 percent in *Global Markets*, 15 percent in *GWIM* (loans that provide financing for asset purchases, business investments and other liquidity needs for high net worth clients) and the remainder primarily in *Consumer Banking*. U.S. commercial loans increased $37.2 billion, or 13 percent, during 2021 primarily driven by *Global Markets* and *Global Banking*. Reservable criticized utilized exposure decreased $10.1 billion, driven by decreases across a broad range of industries.

Non-U.S. Commercial

At December 31, 2021, 69 percent of the non-U.S. commercial loan portfolio was managed in *Global Banking,* 30 percent in *Global Markets* and the remainder in *GWIM*. Non-U.S. commercial loans increased $22.8 billion, or 25 percent, during 2021 primarily in *Global Markets*. Reservable criticized utilized exposure decreased $2.5 billion, which was broad-based across industries. For information on the non-U.S. commercial portfolio, see Non-U.S. Portfolio on page 110.

Commercial Real Estate

Commercial real estate primarily includes commercial loans secured by non-owner-occupied real estate and is dependent on the sale or lease of the real estate as the primary source of repayment. Outstanding loans increased $2.6 billion, or four percent, during 2021 to $63.0 billion due to new originations outpacing paydowns. The portfolio remains diversified across property types and geographic regions. California represented the largest state concentration at 21 percent and 23 percent of the commercial real estate portfolio at December 31, 2021 and 2020. The commercial real estate portfolio is predominantly managed in *Global Banking* and consists of loans made primarily to public and private developers, and commercial real estate firms.

During 2021, we continued to see low default rates and varying degrees of improvement in certain geographic regions and property types of the portfolio. We use a number of proactive risk mitigation initiatives to reduce adversely rated exposure in the commercial real estate portfolio, including transfers of deteriorating exposures for management by independent special asset officers and the pursuit of loan restructurings or asset sales to achieve the best results for our customers and the Corporation.

Table 33 presents outstanding commercial real estate loans by geographic region, based on the geographic location of the collateral, and by property type.

Table 33 Outstanding Commercial Real Estate Loans

(Dollars in millions)	December 31 2021	2020
By Geographic Region		
Northeast	$ **14,318**	$ 11,628
California	**13,145**	14,028
Southwest	**7,510**	8,551
Southeast	**6,758**	6,588
Florida	**4,367**	4,294
Midwest	**3,221**	3,483
Illinois	**2,878**	2,594
Midsouth	**2,289**	2,370
Northwest	**1,709**	1,634
Non-U.S.	**4,760**	3,187
Other	**2,054**	2,007
Total outstanding commercial real estate loans	$ **63,009**	$ 60,364
By Property Type		
Non-residential		
Office	$ **18,309**	$ 17,667
Industrial / Warehouse	**10,749**	8,330
Multi-family rental	**8,173**	7,051
Shopping centers /Retail	**6,502**	7,931
Hotel / Motels	**5,932**	7,226
Unsecured	**3,178**	2,336
Multi-use	**1,835**	1,460
Other	**7,238**	7,146
Total non-residential	**61,916**	59,147
Residential	**1,093**	1,217
Total outstanding commercial real estate loans	$ **63,009**	$ 60,364

U.S. Small Business Commercial

The U.S. small business commercial loan portfolio is comprised of small business card loans and small business loans primarily managed in *Consumer Banking,* and includes $4.7 billion and $22.7 billion of PPP loans outstanding at December 31, 2021 and 2020. The decline of $18.0 billion in PPP loans during 2021 was due to repayment of the loans by the SBA under the terms of the program. Excluding PPP, credit card-related products were 50 percent of the U.S. small business commercial portfolio at both December 31, 2021 and 2020 and represented 95 percent of net charge-offs in 2021 compared to 91 percent in 2020.

Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity

Table 34 presents the nonperforming commercial loans, leases and foreclosed properties activity during 2021 and 2020. Nonperforming loans do not include loans accounted for under the fair value option. During 2021, nonperforming commercial loans and leases decreased $649 million to $1.6 billion. At December 31, 2021, 88 percent of commercial nonperforming loans, leases and foreclosed properties were secured and 54 percent were contractually current. Commercial nonperforming loans were carried at 90 percent of their unpaid principal balance, as the carrying value of these loans has been reduced to the estimated collateral value less costs to sell.

Table 34 Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity [1, 2]

(Dollars in millions)	2021	2020
Nonperforming loans and leases, January 1	$ **2,227**	$ 1,499
Additions	**1,622**	3,518
Reductions:		
Paydowns	**(1,163)**	(1,002)
Sales	**(199)**	(350)
Returns to performing status [3]	**(264)**	(172)
Charge-offs	**(254)**	(1,208)
Transfers to foreclosed properties	**—**	(2)
Transfers to loans held-for-sale	**(391)**	(56)
Total net additions (reductions) to nonperforming loans and leases	**(649)**	728
Total nonperforming loans and leases, December 31	**1,578**	2,227
Foreclosed properties, December 31	**29**	41
Nonperforming commercial loans, leases and foreclosed properties, December 31	$ **1,607**	$ 2,268
Nonperforming commercial loans and leases as a percentage of outstanding commercial loans and leases [4]	**0.29 %**	0.45 %
Nonperforming commercial loans, leases and foreclosed properties as a percentage of outstanding commercial loans, leases and foreclosed properties [4]	**0.30**	0.46

(1) Balances do not include nonperforming loans held-for-sale of $264 million and $359 million at December 31, 2021 and 2020.
(2) Includes U.S. small business commercial activity. Small business card loans are excluded as they are not classified as nonperforming.
(3) Commercial loans and leases may be returned to performing status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected, or when the loan otherwise becomes well-secured and is in the process of collection. TDRs are generally classified as performing after a sustained period of demonstrated payment performance.
(4) Outstanding commercial loans exclude loans accounted for under the fair value option.

Table 35 presents our commercial TDRs by product type and performing status. U.S. small business commercial TDRs are comprised of renegotiated small business card loans and small business loans. The renegotiated small business card loans are not classified as nonperforming as they are charged off no later than the end of the month in which the loan becomes 180 days past due.

Table 35 Commercial Troubled Debt Restructurings

	December 31, 2021			December 31, 2020		
(Dollars in millions)	Nonperforming	Performing	Total	Nonperforming	Performing	Total
Commercial and industrial:						
U.S. commercial	$ 359	$ 685	$ 1,044	$ 509	$ 850	$ 1,359
Non-U.S. commercial	72	8	80	49	119	168
Total commercial and industrial	431	693	1,124	558	969	1,527
Commercial real estate	244	437	681	137	—	137
Commercial lease financing	50	7	57	42	2	44
	725	1,137	1,862	737	971	1,708
U.S. small business commercial	—	38	38	—	29	29
Total commercial troubled debt restructurings	$ 725	$ 1,175	$ 1,900	$ 737	$ 1,000	$ 1,737

Industry Concentrations

Table 36 presents commercial committed and utilized credit exposure by industry. Our commercial credit exposure is diversified across a broad range of industries. Total commercial committed exposure increased $89.6 billion, or nine percent, during 2021 to $1.1 trillion. The increase in commercial committed exposure was concentrated in the Asset managers and funds, Finance companies and Utilities industry sectors. Increases were partially offset by decreased exposure to the Government and public education and Automobiles and components industry sectors.

Industry limits are used internally to manage industry concentrations and are based on committed exposure that is determined on an industry-by-industry basis. A risk management framework is in place to set and approve industry limits as well as to provide ongoing monitoring.

Asset managers and funds, our largest industry concentration with committed exposure of $136.9 billion, increased $36.6 billion, or 37 percent, during 2021, which was primarily driven by secured investment grade exposures.

Real estate, our second largest industry concentration with committed exposure of $96.2 billion, increased $4.5 billion, or five percent, during 2021. For more information on the commercial real estate and related portfolios, see Commercial Portfolio Credit Risk Management – Commercial Real Estate on page 106.

Finance companies, our third largest industry concentration with committed exposure of $86.0 billion, increased $16.0 billion, or 23 percent during 2021, with the growth largely occurring in Consumer Finance, Thrifts and Mortgage Finance and Diversified Financials.

Given the widespread impact of the pandemic on the U.S. and global economy, a number of industries have been and will likely continue to be adversely impacted. We continue to monitor all industries, particularly higher risk industries that are experiencing or could experience a more significant impact to their financial condition.

Table 36 Commercial Credit Exposure by Industry [(1)]

(Dollars in millions)	Commercial Utilized		Total Commercial Committed [(2)]	
	December 31			
	2021	2020	2021	2020
Asset managers & funds	$ 89,786	$ 67,360	$ 136,914	$ 100,296
Real estate [(3)]	69,384	68,967	96,202	91,730
Finance companies	59,327	46,948	86,009	70,004
Capital goods	42,784	39,807	84,293	80,815
Healthcare equipment and services	32,003	33,488	58,195	57,540
Materials	25,133	24,516	53,652	50,757
Retailing	24,514	23,700	50,816	48,306
Government & public education	37,597	41,669	50,066	56,212
Consumer services	28,172	31,993	48,052	47,997
Food, beverage and tobacco	21,584	22,755	45,419	44,417
Commercial services and supplies	22,390	21,107	42,451	38,092
Individuals and trusts	29,752	24,727	39,869	34,036
Utilities	17,082	12,387	36,855	29,234
Energy	14,217	13,930	34,136	32,974
Transportation	21,079	23,126	32,015	33,082
Software and services	10,663	10,853	27,643	22,524
Technology hardware and equipment	10,159	9,935	26,910	24,196
Media	12,495	12,632	26,318	24,120
Global commercial banks	20,062	20,544	21,390	22,595
Telecommunication services	10,056	9,411	21,270	15,605
Consumer durables and apparel	9,740	9,232	21,226	20,223
Pharmaceuticals and biotechnology	5,608	4,830	19,439	15,901
Automobiles and components	9,236	10,792	17,052	20,575
Vehicle dealers	11,030	15,028	15,678	18,696
Insurance	5,743	5,772	14,323	13,277
Food and staples retailing	6,902	5,209	12,226	11,795
Financial markets infrastructure (clearinghouses)	3,876	4,939	6,076	8,648
Religious and social organizations	3,154	4,646	5,394	6,597
Total commercial credit exposure by industry	**$ 653,528**	$ 620,303	**$ 1,129,889**	$ 1,040,244

(1) Includes U.S. small business commercial exposure.
(2) Includes the notional amount of unfunded legally binding lending commitments net of amounts distributed (i.e., syndicated or participated) to other financial institutions. The distributed amounts were $10.7 billion and $10.5 billion at December 31, 2021 and 2020.
(3) Industries are viewed from a variety of perspectives to best isolate the perceived risks. For purposes of this table, the real estate industry is defined based on the primary business activity of the borrowers or counterparties using operating cash flows and primary source of repayment as key factors.

Risk Mitigation

We purchase credit protection to cover the funded portion as well as the unfunded portion of certain credit exposures. To lower the cost of obtaining our desired credit protection levels, we may add credit exposure within an industry, borrower or counterparty group by selling protection.

At December 31, 2021 and 2020, net notional credit default protection purchased in our credit derivatives portfolio to hedge our funded and unfunded exposures for which we elected the fair value option, as well as certain other credit exposures, was $2.6 billion and $4.2 billion. We recorded net losses of $91 million in 2021 compared to net losses of $240 million in 2020. The gains and losses on these instruments were offset by gains and losses on the related exposures. The Value-at-Risk (VaR) results for these exposures are included in the fair value option portfolio information in Table 43. For more information, see Trading Risk Management on page 115.

Tables 37 and 38 present the maturity profiles and the credit exposure debt ratings of the net credit default protection portfolio at December 31, 2021 and 2020.

Table 37 Net Credit Default Protection by Maturity

	December 31	
	2021	2020
Less than or equal to one year	34 %	65 %
Greater than one year and less than or equal to five years	62	34
Greater than five years	4	1
Total net credit default protection	**100 %**	100 %

Table 38 Net Credit Default Protection by Credit Exposure Debt Rating

(Dollars in millions)	Net Notional [(1)]	Percent of Total	Net Notional [(1)]	Percent of Total
	December 31			
	2021		2020	
Ratings [(2, 3)]				
A	$ (350)	13.4 %	$ (250)	6.0 %
BBB	(710)	27.1	(1,856)	44.5
BB	(809)	30.9	(1,363)	32.7
B	(659)	25.2	(465)	11.2
CCC and below	(35)	1.3	(182)	4.4
NR [(4)]	(55)	2.1	(54)	1.2
Total net credit default protection	**$ (2,618)**	**100.0 %**	$ (4,170)	100.0 %

(1) Represents net credit default protection purchased.
(2) Ratings are refreshed on a quarterly basis.
(3) Ratings of BBB- or higher are considered to meet the definition of investment grade.
(4) NR is comprised of index positions held and any names that have not been rated.

In addition to our net notional credit default protection purchased to cover the funded and unfunded portion of certain credit exposures, credit derivatives are used for market-making activities for clients and establishing positions intended to profit from directional or relative value changes. We execute the majority of our credit derivative trades in the OTC market with large, multinational financial institutions, including broker-dealers and, to a lesser degree, with a variety of other investors. Because these transactions are executed in the OTC market, we are subject to settlement risk. We are also subject to credit risk in the event that these counterparties fail to perform under the terms of these contracts. In order to properly reflect counterparty credit risk, we record counterparty credit risk valuation adjustments on certain derivative assets, including our purchased credit default protection. In most cases, credit derivative transactions are executed on a daily margin basis. Therefore, events such as a credit downgrade, depending on the ultimate rating level, or a breach of credit covenants would typically require an increase in the amount of collateral required by the counterparty, where applicable, and/or allow us to take additional protective measures such as early termination of all trades. For more information on credit derivatives and counterparty credit risk valuation adjustments, see *Note 3 – Derivatives* to the Consolidated Financial Statements.

Non-U.S. Portfolio

Our non-U.S. credit and trading portfolios are subject to country risk. We define country risk as the risk of loss from unfavorable economic and political conditions, currency fluctuations, social instability and changes in government policies. A risk management framework is in place to measure, monitor and manage non-U.S. risk and exposures. In addition to the direct risk of doing business in a country, we also are exposed to indirect country risks (e.g., related to the collateral received on secured financing transactions or related to client clearing activities). These indirect exposures are managed in the normal course of business through credit, market and operational risk governance rather than through country risk governance.

Table 39 presents our 20 largest non-U.S. country exposures at December 31, 2021. These exposures accounted for 89 percent and 90 percent of our total non-U.S. exposure at December 31, 2021 and 2020. Net country exposure for these 20 countries increased $10.5 billion in 2021 primarily driven by increases in Australia, Canada and France, partially offset by reductions in Germany and the United Kingdom.

Non-U.S. exposure is presented on an internal risk management basis and includes sovereign and non-sovereign credit exposure, securities and other investments issued by or domiciled in countries other than the U.S.

Funded loans and loan equivalents include loans, leases, and other extensions of credit and funds, including letters of credit and due from placements. Unfunded commitments are the undrawn portion of legally binding commitments related to loans and loan equivalents. Net counterparty exposure includes the fair value of derivatives, including the counterparty risk associated with credit default swaps (CDS), and secured financing transactions. Securities and other investments are carried at fair value and long securities exposures are netted against short exposures with the same underlying issuer to, but not below, zero. Net country exposure represents country exposure less hedges and credit default protection purchased, net of credit default protection sold.

Table 39 Top 20 Non-U.S. Countries Exposure

(Dollars in millions)	Funded Loans and Loan Equivalents	Unfunded Loan Commitments	Net Counterparty Exposure	Securities/ Other Investments	Country Exposure at December 31 2021	Hedges and Credit Default Protection	**Net Country Exposure at December 31 2021**	Increase (Decrease) from December 31 2020
United Kingdom	$ 32,062	$ 15,858	$ 5,932	$ 2,399	$ 56,251	$ (1,282)	**$ 54,969**	$ (4,503)
Germany	21,397	9,790	1,794	1,807	34,788	(963)	**33,825**	(11,078)
Canada	9,138	12,783	1,441	3,551	26,913	(602)	**26,311**	5,177
France	12,393	8,234	1,391	3,710	25,728	(821)	**24,907**	4,116
Australia	9,194	9,078	434	2,812	21,518	(214)	**21,304**	8,217
Japan	14,812	1,528	1,308	371	18,019	(757)	**17,262**	(234)
Brazil	6,814	1,382	526	4,227	12,949	(199)	**12,750**	2,457
China	9,941	689	894	1,370	12,894	(312)	**12,582**	(838)
Singapore	3,914	709	249	5,850	10,722	(57)	**10,665**	1,383
Netherlands	3,839	4,780	452	950	10,021	(425)	**9,596**	(88)
India	6,485	388	470	1,454	8,797	(166)	**8,631**	820
Switzerland	5,072	3,125	277	338	8,812	(237)	**8,575**	1,680
South Korea	5,800	771	545	1,191	8,307	(155)	**8,152**	(399)
Hong Kong	5,523	315	338	1,167	7,343	(16)	**7,327**	790
Mexico	4,333	1,577	136	629	6,675	(213)	**6,462**	175
Spain	2,482	2,126	473	1,198	6,279	(359)	**5,920**	1,104
Ireland	4,037	1,019	136	376	5,568	(29)	**5,539**	1,374
Italy	2,843	1,098	348	1,484	5,773	(569)	**5,204**	(488)
Belgium	2,548	1,516	462	687	5,213	(182)	**5,031**	64
United Arab Emirates	2,942	329	36	234	3,541	(47)	**3,494**	807
Total top 20 non-U.S. countries exposure	$ 165,569	$ 77,095	$ 17,642	$ 35,805	$ 296,111	$ (7,605)	**$ 288,506**	$ 10,536

Our largest non-U.S. country exposure at December 31, 2021 was the United Kingdom with net exposure of $55.0 billion, which represents a $4.5 billion decrease from December 31, 2020. Our second largest non-U.S. country exposure was Germany with net exposure of $33.8 billion at December 31, 2021, a $11.1 billion decrease from December 31, 2020. The decrease in both of these countries was primarily driven by a reduction in deposits with central banks.

In light of the global pandemic, we are monitoring our non-U.S. exposure closely, particularly in countries where restrictions on certain activities, in an attempt to contain the spread and impact of the virus, have affected and will likely continue to adversely affect economic activity.

The impact of COVID-19 could have an adverse impact on the global economy for a prolonged period of time. For more information on how the pandemic may affect our operations, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 66 and Part 1. Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

Loan and Lease Contractual Maturities

Table 40 disaggregates total outstanding loans and leases by remaining contractual maturities and interest rates. The amounts provided do not reflect prepayment assumptions or hedging activities related to the loan portfolio. For information on the asset sensitivity of our total banking book balance sheet, see Interest Rate Risk Management for the Banking Book on page 118.

Table 40 Loan and Lease Contractual Maturities (1)

	December 31, 2021				
(Dollars in millions)	Due in One Year or Less	Due After One Year Through Five Years	Due After Five Years Through 15 Years	Due After 15 Years	Total
Residential mortgage	$ 175	$ 702	$ 48,614	$ 172,751	**$ 222,242**
Home equity	1,596	92	6,159	20,427	**28,274**
Credit card	81,438	—	—	—	**81,438**
Direct/Indirect consumer	54,080	30,940	14,535	4,005	**103,560**
Other consumer	190	—	—	—	**190**
Total consumer loans	**$ 137,479**	**$ 31,734**	**$ 69,308**	**$ 197,183**	**$ 435,704**
U.S. commercial	$ 93,480	$ 195,157	$ 39,370	$ 2,505	**$ 330,512**
Non-U.S. commercial	42,570	50,514	21,754	1,053	**115,891**
Commercial real estate	16,322	42,363	3,386	938	**63,009**
Commercial lease financing	1,349	8,676	3,865	935	**14,825**
U.S. small business commercial	9,428	3,895	5,656	204	**19,183**
Total commercial loans	**$ 163,149**	**$ 300,605**	**$ 74,031**	**$ 5,635**	**$ 543,420**
Total loans and leases	**$ 300,628**	**$ 332,339**	**$ 143,339**	**$ 202,818**	**$ 979,124**

	Amount due in one year or less at:		Amount due after one year at:		
(Dollars in millions)	Variable Interest Rates	Fixed Interest Rates	Variable Interest Rates	Fixed Interest Rates	Total
Residential mortgage	$ 18	$ 157	$ 80,967	$ 141,100	**$ 222,242**
Home equity	98	1,498	25,982	696	**28,274**
Credit card	77,151	4,287	—	—	**81,438**
Direct/Indirect consumer	48,424	5,656	2,551	46,929	**103,560**
Other consumer	—	190	—	—	**190**
Total consumer loans	**$ 125,691**	**$ 11,788**	**$ 109,500**	**$ 188,725**	**$ 435,704**
U.S. commercial	$ 84,398	$ 9,082	$ 190,978	$ 46,054	**$ 330,512**
Non-U.S. commercial	39,472	3,098	70,817	2,504	**115,891**
Commercial real estate	15,673	649	44,626	2,061	**63,009**
Commercial lease financing	187	1,162	1,560	11,916	**14,825**
U.S. small business commercial	5,150	4,278	98	9,657	**19,183**
Total commercial loans	**$ 144,880**	**$ 18,269**	**$ 308,079**	**$ 72,192**	**$ 543,420**
Total loans and leases	**$ 270,571**	**$ 30,057**	**$ 417,579**	**$ 260,917**	**$ 979,124**

(1) Includes loans accounted for under the fair value option.

Allowance for Credit Losses

The allowance for credit losses decreased $6.8 billion from December 31, 2020 to $13.8 billion at December 31, 2021, which included a $3.8 billion reserve decrease related to the commercial portfolio and a $3.1 billion reserve decrease related to the consumer portfolio. The decreases were primarily driven by improvements in the macroeconomic outlook and credit quality.

Table 41 presents an allocation of the allowance for credit losses by product type at December 31, 2021 and 2020.

Table 41 Allocation of the Allowance for Credit Losses by Product Type

(Dollars in millions)	December 31, 2021 Amount	December 31, 2021 Percent of Total	December 31, 2021 Percent of Loans and Leases Outstanding [1]	December 31, 2020 Amount	December 31, 2020 Percent of Total	December 31, 2020 Percent of Loans and Leases Outstanding [1]
Allowance for loan and lease losses						
Residential mortgage	$ 351	2.83 %	0.16 %	$ 459	2.44 %	0.21 %
Home equity	206	1.66	0.74	399	2.12	1.16
Credit card	5,907	47.70	7.25	8,420	44.79	10.70
Direct/Indirect consumer	523	4.22	0.51	752	4.00	0.82
Other consumer	46	0.37	n/m	41	0.22	n/m
Total consumer	7,033	56.78	1.62	10,071	53.57	2.35
U.S. commercial [2]	3,019	24.37	0.87	5,043	26.82	1.55
Non-U.S. commercial	975	7.87	0.86	1,241	6.60	1.37
Commercial real estate	1,292	10.43	2.05	2,285	12.15	3.79
Commercial lease financing	68	0.55	0.46	162	0.86	0.95
Total commercial	5,354	43.22	1.00	8,731	46.43	1.77
Allowance for loan and lease losses	12,387	100.00 %	1.28	18,802	100.00 %	2.04
Reserve for unfunded lending commitments	1,456			1,878		
Allowance for credit losses	$ 13,843			$ 20,680		

[1] Ratios are calculated as allowance for loan and lease losses as a percentage of loans and leases outstanding excluding loans accounted for under the fair value option.
[2] Includes allowance for loan and lease losses for U.S. small business commercial loans of $1.2 billion and $1.5 billion at December 31, 2021 and 2020.
n/m = not meaningful

Net charge-offs for 2021 were $2.2 billion compared to $4.1 billion in 2020 driven by decreases across most products. The provision for credit losses decreased $15.9 billion to a $4.6 billion benefit during 2021 compared to 2020. The allowance for credit losses had a reserve release of $6.8 billion for 2021, primarily driven by improvements in the macroeconomic outlook and credit quality. The provision for credit losses for the consumer portfolio, including unfunded lending commitments, decreased $6.1 billion to a benefit of $1.2 billion during 2021 compared to 2020. The provision for credit losses for the commercial portfolio, including unfunded lending commitments, decreased $9.8 billion to a $3.4 billion benefit for 2021 compared to 2020.

Table 42 presents a rollforward of the allowance for credit losses, including certain loan and allowance ratios for 2021 and 2020. For more information on the Corporation's credit loss accounting policies and activity related to the allowance for credit losses, see *Note 1 – Summary of Significant Accounting Principles* and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements.

Table 42 Allowance for Credit Losses

(Dollars in millions)	2021	2020
Allowance for loan and lease losses, January 1	**$ 18,802**	$ 12,358
Loans and leases charged off		
Residential mortgage	**(34)**	(40)
Home equity	**(44)**	(58)
Credit card	**(2,411)**	(2,967)
Direct/Indirect consumer	**(297)**	(372)
Other consumer	**(292)**	(307)
Total consumer charge-offs	**(3,078)**	(3,744)
U.S. commercial [1]	**(626)**	(1,163)
Non-U.S. commercial	**(47)**	(168)
Commercial real estate	**(46)**	(275)
Commercial lease financing	**—**	(69)
Total commercial charge-offs	**(719)**	(1,675)
Total loans and leases charged off	**(3,797)**	(5,419)
Recoveries of loans and leases previously charged off		
Residential mortgage	**62**	70
Home equity	**163**	131
Credit card	**688**	618
Direct/Indirect consumer	**296**	250
Other consumer	**22**	23
Total consumer recoveries	**1,231**	1,092
U.S. commercial [2]	**298**	178
Non-U.S. commercial	**12**	13
Commercial real estate	**12**	5
Commercial lease financing	**1**	10
Total commercial recoveries	**323**	206
Total recoveries of loans and leases previously charged off	**1,554**	1,298
Net charge-offs	**(2,243)**	(4,121)
Provision for loan and lease losses	**(4,173)**	10,565
Other	**1**	—
Allowance for loan and lease losses, December 31	**12,387**	18,802
Reserve for unfunded lending commitments, January 1	**1,878**	1,123
Provision for unfunded lending commitments	**(421)**	755
Other	**(1)**	—
Reserve for unfunded lending commitments, December 31	**1,456**	1,878
Allowance for credit losses, December 31	**$ 13,843**	$ 20,680
Loan and allowance ratios [3]:		
Loans and leases outstanding at December 31	**$ 971,305**	$ 921,180
Allowance for loan and lease losses as a percentage of total loans and leases outstanding at December 31	**1.28 %**	2.04 %
Consumer allowance for loan and lease losses as a percentage of total consumer loans and leases outstanding at December 31	**1.62**	2.35
Commercial allowance for loan and lease losses as a percentage of total commercial loans and leases outstanding at December 31	**1.00**	1.77
Average loans and leases outstanding	**$ 913,354**	$ 974,281
Annualized net charge-offs as a percentage of average loans and leases outstanding	**0.25 %**	0.42 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases at December 31	**271**	380
Ratio of the allowance for loan and lease losses at December 31 to net charge-offs	**5.52**	4.56
Amounts included in allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases at December 31 [4]	**$ 7,027**	$ 9,854
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases, excluding the allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases at December 31 [4]	**117 %**	181 %

(1) Includes U.S. small business commercial charge-offs of $425 million in 2021 compared to $321 million in 2020.
(2) Includes U.S. small business commercial recoveries of $74 million for 2021 compared to $54 million in 2020.
(3) Ratios are calculated as allowance for loan and lease losses as a percentage of loans and leases outstanding excluding loans accounted for under the fair value option.
(4) Primarily includes amounts related to credit card and unsecured consumer lending portfolios in *Consumer Banking*.

Market Risk Management

Market risk is the risk that changes in market conditions may adversely impact the value of assets or liabilities, or otherwise negatively impact earnings. This risk is inherent in the financial instruments associated with our operations, primarily within our *Global Markets* segment. We are also exposed to these risks in other areas of the Corporation (e.g., our ALM activities). In the event of market stress, these risks could have a material impact on our results. For more information, see Interest Rate Risk Management for the Banking Book on page 118.

We have been affected, and may continue to be affected, by market stress resulting from the pandemic that began in the first quarter of 2020. For more information, see Part 1. Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

Our traditional banking loan and deposit products are non-trading positions and are generally reported at amortized cost for assets or the amount owed for liabilities (historical cost). However, these positions are still subject to changes in economic value based on varying market conditions, with one of the primary risks being changes in the levels of interest rates. The risk of adverse changes in the economic value of our non-trading positions arising from changes in interest rates is managed through our ALM activities. We have elected to account for certain assets and liabilities under the fair value option.

Our trading positions are reported at fair value with changes reflected in income. Trading positions are subject to various changes in market-based risk factors. The majority of this risk is generated by our activities in the interest rate, foreign exchange, credit, equity and commodities markets. In addition, the values of assets and liabilities could change due to market liquidity, correlations across markets and expectations of market volatility. We seek to manage these risk exposures by using a variety of techniques that encompass a broad range of financial instruments. The key risk management techniques are discussed in more detail in the Trading Risk Management section.

Global Risk Management is responsible for providing senior management with a clear and comprehensive understanding of the trading risks to which we are exposed. These responsibilities include ownership of market risk policy, developing and maintaining quantitative risk models, calculating aggregated risk measures, establishing and monitoring position limits consistent with risk appetite, conducting daily reviews and analysis of trading inventory, approving material risk exposures and fulfilling regulatory requirements. Market risks that impact businesses outside of *Global Markets* are monitored and governed by their respective governance functions.

Model risk is the potential for adverse consequences from decisions based on incorrect or misused model outputs and reports. Given that models are used across the Corporation, model risk impacts all risk types including credit, market and operational risks. The Enterprise Model Risk Policy defines model risk standards, consistent with our Risk Framework and risk appetite, prevailing regulatory guidance and industry best practice. All models, including risk management, valuation and regulatory capital models, must meet certain validation criteria, including effective challenge of the conceptual soundness of the model, independent model testing and ongoing monitoring through outcomes analysis and benchmarking. The Enterprise Model Risk Committee (EMRC), a subcommittee of the MRC, oversees that model standards are consistent with model risk requirements and monitors the effective challenge in the model validation process across the Corporation.

Interest Rate Risk

Interest rate risk represents exposures to instruments whose values vary with the level or volatility of interest rates. These instruments include, but are not limited to, loans, debt securities, certain trading-related assets and liabilities, deposits, borrowings and derivatives. Hedging instruments used to mitigate these risks include derivatives such as options, futures, forwards and swaps.

Foreign Exchange Risk

Foreign exchange risk represents exposures to changes in the values of current holdings and future cash flows denominated in currencies other than the U.S. dollar. The types of instruments exposed to this risk include investments in non-U.S. subsidiaries, foreign currency-denominated loans and securities, future cash flows in foreign currencies arising from foreign exchange transactions, foreign currency-denominated debt and various foreign exchange derivatives whose values fluctuate with changes in the level or volatility of currency exchange rates or non-U.S. interest rates. Hedging instruments used to mitigate this risk include foreign exchange options, currency swaps, futures, forwards, and foreign currency-denominated debt and deposits.

Mortgage Risk

Mortgage risk represents exposures to changes in the values of mortgage-related instruments. The values of these instruments are sensitive to prepayment rates, mortgage rates, agency debt ratings, default, market liquidity, government participation and interest rate volatility. Our exposure to these instruments takes several forms. For example, we trade and engage in market-making activities in a variety of mortgage securities including whole loans, pass-through certificates, commercial mortgages and collateralized mortgage obligations including collateralized debt obligations using mortgages as underlying collateral. In addition, we originate a variety of MBS, which involves the accumulation of mortgage-related loans in anticipation of eventual securitization, and we may hold positions in mortgage securities and residential mortgage loans as part of the ALM portfolio. We also record MSRs as part of our mortgage origination activities. Hedging instruments used to mitigate this risk include derivatives such as options, swaps, futures and forwards as well as securities including MBS and U.S. Treasury securities. For more information, see Mortgage Banking Risk Management on page 119.

Equity Market Risk

Equity market risk represents exposures to securities that represent an ownership interest in a corporation in the form of domestic and foreign common stock or other equity-linked instruments. Instruments that would lead to this exposure include, but are not limited to, the following: common stock, exchange-traded funds, American Depositary Receipts, convertible bonds, listed equity options (puts and calls), OTC equity options, equity total return swaps, equity index futures and other equity derivative products. Hedging instruments used to mitigate this risk include options, futures, swaps, convertible bonds and cash positions.

Commodity Risk

Commodity risk represents exposures to instruments traded in the petroleum, natural gas, power and metals markets. These instruments consist primarily of futures, forwards, swaps and options. Hedging instruments used to mitigate this risk include

options, futures and swaps in the same or similar commodity product, as well as cash positions.

Issuer Credit Risk

Issuer credit risk represents exposures to changes in the creditworthiness of individual issuers or groups of issuers. Our portfolio is exposed to issuer credit risk where the value of an asset may be adversely impacted by changes in the levels of credit spreads, by credit migration or by defaults. Hedging instruments used to mitigate this risk include bonds, CDS and other credit fixed-income instruments.

Market Liquidity Risk

Market liquidity risk represents the risk that the level of expected market activity changes dramatically and, in certain cases, may even cease. This exposes us to the risk that we will not be able to transact business and execute trades in an orderly manner which may impact our results. This impact could be further exacerbated if expected hedging or pricing correlations are compromised by disproportionate demand or lack of demand for certain instruments. We utilize various risk mitigating techniques as discussed in more detail in Trading Risk Management.

Trading Risk Management

To evaluate risks in our trading activities, we focus on the actual and potential volatility of revenues generated by individual positions as well as portfolios of positions. Various techniques and procedures are utilized to enable the most complete understanding of these risks. Quantitative measures of market risk are evaluated on a daily basis from a single position to the portfolio of the Corporation. These measures include sensitivities of positions to various market risk factors, such as the potential impact on revenue from a one basis point change in interest rates, and statistical measures utilizing both actual and hypothetical market moves, such as VaR and stress testing. Periods of extreme market stress influence the reliability of these techniques to varying degrees. Qualitative evaluations of market risk utilize the suite of quantitative risk measures while understanding each of their respective limitations. Additionally, risk managers independently evaluate the risk of the portfolios under the current market environment and potential future environments.

VaR is a common statistic used to measure market risk as it allows the aggregation of market risk factors, including the effects of portfolio diversification. A VaR model simulates the value of a portfolio under a range of scenarios in order to generate a distribution of potential gains and losses. VaR represents the loss a portfolio is not expected to exceed more than a certain number of times per period, based on a specified holding period, confidence level and window of historical data. We use one VaR model consistently across the trading portfolios and it uses a historical simulation approach based on a three-year window of historical data. Our primary VaR statistic is equivalent to a 99 percent confidence level, which means that for a VaR with a one-day holding period, there should not be losses in excess of VaR, on average, 99 out of 100 trading days.

Within any VaR model, there are significant and numerous assumptions that will differ from company to company. The accuracy of a VaR model depends on the availability and quality of historical data for each of the risk factors in the portfolio. A VaR model may require additional modeling assumptions for new products that do not have the necessary historical market data or for less liquid positions for which accurate daily prices are not consistently available. For positions with insufficient historical data for the VaR calculation, the process for establishing an appropriate proxy is based on fundamental and statistical analysis of the new product or less liquid position. This analysis identifies reasonable alternatives that replicate both the expected volatility and correlation to other market risk factors that the missing data would be expected to experience.

VaR may not be indicative of realized revenue volatility as changes in market conditions or in the composition of the portfolio can have a material impact on the results. In particular, the historical data used for the VaR calculation might indicate higher or lower levels of portfolio diversification than will be experienced. In order for the VaR model to reflect current market conditions, we update the historical data underlying our VaR model on a weekly basis, or more frequently during periods of market stress, and regularly review the assumptions underlying the model. A minor portion of risks related to our trading positions is not included in VaR. These risks are reviewed as part of our ICAAP. For more information regarding ICAAP, see Capital Management on page 88.

Global Risk Management continually reviews, evaluates and enhances our VaR model so that it reflects the material risks in our trading portfolio. Changes to the VaR model are reviewed and approved prior to implementation and any material changes are reported to management through the appropriate management committees.

Trading limits on quantitative risk measures, including VaR, are independently set by Global Markets Risk Management and reviewed on a regular basis so that trading limits remain relevant and within our overall risk appetite for market risks. Trading limits are reviewed in the context of market liquidity, volatility and strategic business priorities. Trading limits are set at both a granular level to allow for extensive coverage of risks as well as at aggregated portfolios to account for correlations among risk factors. All trading limits are approved at least annually. Approved trading limits are stored and tracked in a centralized limits management system. Trading limit excesses are communicated to management for review. Certain quantitative market risk measures and corresponding limits have been identified as critical in the Corporation's Risk Appetite Statement. These risk appetite limits are reported on a daily basis and are approved at least annually by the ERC and the Board.

In periods of market stress, *Global Markets* senior leadership communicates daily to discuss losses, key risk positions and any limit excesses. As a result of this process, the businesses may selectively reduce risk.

Table 43 presents the total market-based portfolio VaR, which is the combination of the total covered positions (and less liquid trading positions) portfolio and the fair value option portfolio. Covered positions are defined by regulatory standards as trading assets and liabilities, both on- and off-balance sheet, that meet a defined set of specifications. These specifications identify the most liquid trading positions which are intended to be held for a short-term horizon and where we are able to hedge the material risk elements in a two-way market. Positions in less liquid markets, or where there are restrictions on the ability to trade the positions, typically do not qualify as covered positions. Foreign exchange and commodity positions are always considered covered positions, except for structural foreign currency positions that are excluded with prior regulatory approval.

In addition, Table 43 presents our fair value option portfolio, which includes substantially all of the funded and unfunded exposures for which we elect the fair value option, and their corresponding hedges. Additionally, market risk VaR for trading activities as presented in Table 43 differs from VaR used for regulatory capital calculations due to the holding period being used. The holding period for VaR used for regulatory capital calculations is 10 days, while for the market risk VaR presented below, it is one day. Both measures utilize the same process and methodology.

The total market-based portfolio VaR results in Table 43 include market risk to which we are exposed from all business segments, excluding credit valuation adjustment (CVA), DVA and related hedges. The majority of this portfolio is within the *Global Markets* segment.

Table 43 presents year-end, average, high and low daily trading VaR for 2021 and 2020 using a 99 percent confidence level. The amounts disclosed in Table 43 and Table 44 align to the view of covered positions used in the Basel 3 capital calculations. Foreign exchange and commodity positions are always considered covered positions, regardless of trading or banking treatment for the trade, except for structural foreign currency positions that are excluded with prior regulatory approval.

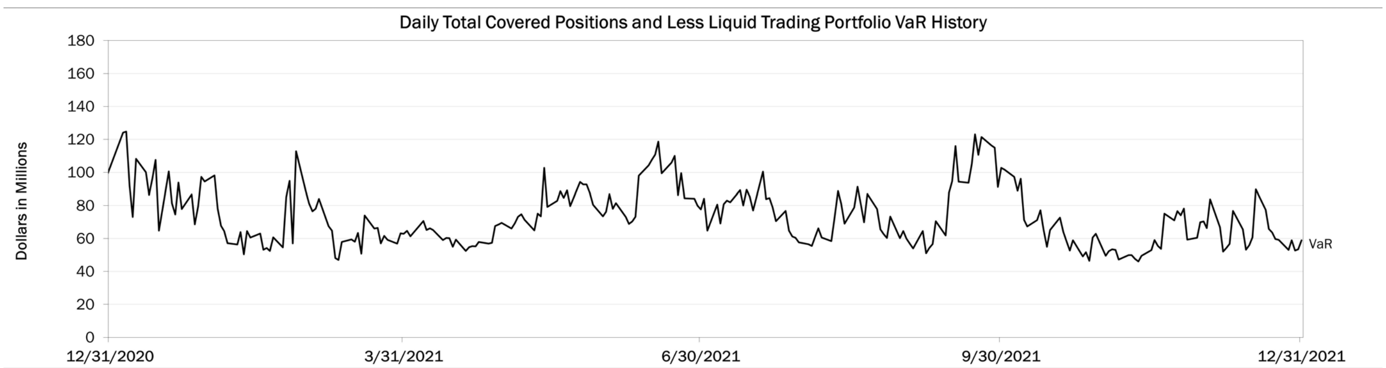
The annual average of total covered positions and less liquid trading positions portfolio VaR decreased for 2021 compared to 2020 primarily due to an increase in diversification across asset classes.

Table 43 Market Risk VaR for Trading Activities

	2021				2020			
(Dollars in millions)	Year End	Average	High [1]	Low [1]	Year End	Average	High [1]	Low [1]
Foreign exchange	$ 11	$ 12	$ 21	$ 5	$ 8	$ 7	$ 25	$ 2
Interest rate	54	40	80	16	30	19	39	7
Credit	73	69	84	53	79	58	91	25
Equity	21	24	35	19	20	24	162	12
Commodities	6	8	28	4	4	6	12	3
Portfolio diversification	(114)	(100)	—	—	(72)	(61)	—	—
Total covered positions portfolio	51	53	85	34	69	53	171	27
Impact from less liquid exposures [2]	8	20	—	—	52	27	—	—
Total covered positions and less liquid trading positions portfolio	59	73	125	46	121	80	169	30
Fair value option loans	51	50	65	31	52	52	84	7
Fair value option hedges	15	16	20	11	11	13	17	9
Fair value option portfolio diversification	(27)	(32)	—	—	(17)	(24)	—	—
Total fair value option portfolio	39	34	53	23	46	41	86	9
Portfolio diversification	(24)	(10)	—	—	(4)	(15)	—	—
Total market-based portfolio	$ 74	$ 97	169	54	$ 163	$ 106	171	32

(1) The high and low for each portfolio may have occurred on different trading days than the high and low for the components. Therefore the impact from less liquid exposures and the amount of portfolio diversification, which is the difference between the total portfolio and the sum of the individual components, is not relevant.
(2) Impact is net of diversification effects between the covered positions and less liquid trading positions portfolios.

The graph below presents the daily covered positions and less liquid trading positions portfolio VaR for 2021, corresponding to the data in Table 43.



Additional VaR statistics produced within our single VaR model are provided in Table 44 at the same level of detail as in Table 43. Evaluating VaR with additional statistics allows for an increased understanding of the risks in the portfolio, as the historical market data used in the VaR calculation does not necessarily follow a predefined statistical distribution. Table 44 presents average trading VaR statistics at 99 percent and 95 percent confidence levels for 2021 and 2020.

Table 44 Average Market Risk VaR for Trading Activities – 99 percent and 95 percent VaR Statistics

	2021		2020	
(Dollars in millions)	99 percent	95 percent	99 percent	95 percent
Foreign exchange	$ 12	$ 8	$ 7	$ 4
Interest rate	40	20	19	9
Credit	69	21	58	18
Equity	24	12	24	13
Commodities	8	4	6	3
Portfolio diversification	(100)	(39)	(61)	(26)
Total covered positions portfolio	53	26	53	21
Impact from less liquid exposures	20	2	27	2
Total covered positions and less liquid trading positions portfolio	73	28	80	23
Fair value option loans	50	12	52	13
Fair value option hedges	16	9	13	7
Fair value option portfolio diversification	(32)	(9)	(24)	(8)
Total fair value option portfolio	34	12	41	12
Portfolio diversification	(10)	(7)	(15)	(6)
Total market-based portfolio	$ 97	$ 33	$ 106	$ 29

Backtesting

The accuracy of the VaR methodology is evaluated by backtesting, which compares the daily VaR results, utilizing a one-day holding period, against a comparable subset of trading revenue. A backtesting excess occurs when a trading loss exceeds the VaR for the corresponding day. These excesses are evaluated to understand the positions and market moves that produced the trading loss with a goal to ensure that the VaR methodology accurately represents those losses. We expect the frequency of trading losses in excess of VaR to be in line with the confidence level of the VaR statistic being tested. For example, with a 99 percent confidence level, we expect one trading loss in excess of VaR every 100 days or between two to three trading losses in excess of VaR over the course of a year. The number of backtesting excesses observed can differ from the statistically expected number of excesses if the current level of market volatility is materially different than the level of market volatility that existed during the three years of historical data used in the VaR calculation.

The trading revenue used for backtesting is defined by regulatory agencies in order to most closely align with the VaR component of the regulatory capital calculation. This revenue differs from total trading-related revenue in that it excludes revenue from trading activities that either do not generate market risk or the market risk cannot be included in VaR. Some examples of the types of revenue excluded for backtesting are fees, commissions, reserves, net interest income and intra-day trading revenues.

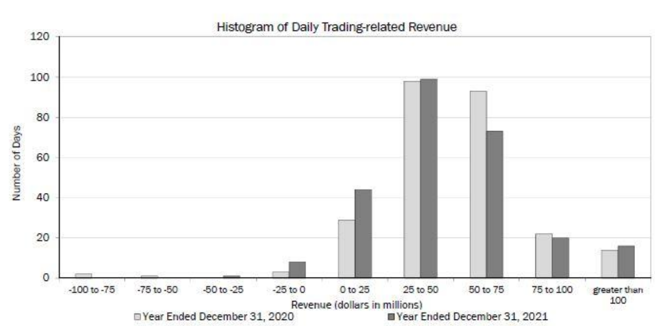
We conduct daily backtesting on the VaR results used for regulatory capital calculations as well as the VaR results for key legal entities, regions and risk factors. These results are reported to senior market risk management. Senior management regularly reviews and evaluates the results of these tests.

During 2021, there were two days where this subset of trading revenue had losses that exceeded our total covered portfolio VaR, utilizing a one-day holding period.

Total Trading-related Revenue

Total trading-related revenue, excluding brokerage fees, and CVA, DVA and funding valuation adjustment gains (losses), represents the total amount earned from trading positions, including market-based net interest income, which are taken in a diverse range of financial instruments and markets. For more information on fair value, see *Note 20 – Fair Value Measurements* to the Consolidated Financial Statements. Trading-related revenue can be volatile and is largely driven by general market conditions and customer demand. Also, trading-related revenue is dependent on the volume and type of transactions, the level of risk assumed, and the volatility of price and rate movements at any given time within the ever-changing market environment. Significant daily revenue by business is monitored and the primary drivers of these are reviewed.

The following histogram is a graphic depiction of trading volatility and illustrates the daily level of trading-related revenue for 2021 and 2020. During 2021, positive trading-related revenue was recorded for 97 percent of the trading days, of which 80 percent were daily trading gains of over $25 million, and the largest loss was $45 million. This compares to 2020 where positive trading-related revenue was recorded for 98 percent of the trading days, of which 87 percent were daily trading gains of over $25 million, and the largest loss was $90 million.



Trading Portfolio Stress Testing

Because the very nature of a VaR model suggests results can exceed our estimates and it is dependent on a limited historical window, we also stress test our portfolio using scenario analysis. This analysis estimates the change in the value of our trading portfolio that may result from abnormal market movements.

A set of scenarios, categorized as either historical or hypothetical, are computed daily for the overall trading portfolio and individual businesses. These scenarios include shocks to underlying market risk factors that may be well beyond the shocks found in the historical data used to calculate VaR. Historical scenarios simulate the impact of the market moves that occurred during a period of extended historical market stress. Generally, a multi-week period representing the most severe point during a crisis is selected for each historical scenario. Hypothetical scenarios provide estimated portfolio impacts from potential future market stress events. Scenarios are reviewed and updated in response to changing positions and new economic or political information. In addition, new or ad hoc scenarios are developed to address specific potential market events or particular vulnerabilities in the portfolio. The stress tests are reviewed on a regular basis and the results are presented to senior management.

Stress testing for the trading portfolio is integrated with enterprise-wide stress testing and incorporated into the limits framework. The macroeconomic scenarios used for enterprise-wide stress testing purposes differ from the typical trading portfolio scenarios in that they have a longer time horizon and the results are forecasted over multiple periods for use in consolidated capital and liquidity planning. For more information, see Managing Risk on page 85.

Interest Rate Risk Management for the Banking Book

The following discussion presents net interest income for banking book activities.

Interest rate risk represents the most significant market risk exposure to our banking book balance sheet. Interest rate risk is measured as the potential change in net interest income caused by movements in market interest rates. Client-facing activities, primarily lending and deposit-taking, create interest rate sensitive positions on our balance sheet.

We prepare forward-looking forecasts of net interest income. The baseline forecast takes into consideration expected future business growth, ALM positioning -and the direction of interest rate movements as implied by the market-based forward curve.

We then measure and evaluate the impact that alternative interest rate scenarios have on the baseline forecast in order to assess interest rate sensitivity under varied conditions. The net interest income forecast is frequently updated for changing assumptions and differing outlooks based on economic trends, market conditions and business strategies. Thus, we continually monitor our balance sheet position in order to maintain an acceptable level of exposure to interest rate changes.

The interest rate scenarios that we analyze incorporate balance sheet assumptions such as loan and deposit growth and pricing, changes in funding mix, product repricing, maturity characteristics and investment securities premium amortization. Our overall goal is to manage interest rate risk so that movements in interest rates do not significantly adversely affect earnings and capital.

Table 45 presents the spot and 12-month forward rates used in our baseline forecasts at December 31, 2021 and 2020.

Table 45 Forward Rates

	December 31, 2021		
	Federal Funds	**Three-month LIBOR**	**10-Year Swap**
Spot rates	**0.25 %**	**0.21 %**	**1.58 %**
12-month forward rates	**1.00**	**1.07**	**1.84**
	December 31, 2020		
Spot rates	0.25 %	0.24 %	0.93 %
12-month forward rates	0.25	0.19	1.06

Table 46 shows the pretax impact to forecasted net interest income over the next 12 months from December 31, 2021 and 2020 resulting from instantaneous parallel and non-parallel shocks to the market-based forward curve. Periodically, we evaluate the scenarios presented so that they are meaningful in the context of the current rate environment. The interest rate scenarios also assume U.S. dollar rates are floored at zero.

During 2021, the overall decrease in asset sensitivity of our balance sheet to Up-rate and Down-rate scenarios was primarily due to ALM activity and an increase in long-end rates. We continue to be asset sensitive to a parallel upward move in interest rates with the majority of that impact coming from the short end of the yield curve. Additionally, higher interest rates impact the fair value of debt securities and, accordingly, for debt securities classified as AFS, may adversely affect accumulated OCI and thus capital levels under the Basel 3 capital rules. Under instantaneous upward parallel shifts, the near-term adverse impact to Basel 3 capital is reduced over time by offsetting positive impacts to net interest income. For more information on Basel 3, see Capital Management – Regulatory Capital on page 89.

Table 46 Estimated Banking Book Net Interest Income Sensitivity to Curve Changes

(Dollars in millions)	Short Rate (bps)	Long Rate (bps)	December 31 **2021**	2020
Parallel Shifts				
+100 bps instantaneous shift	+100	+100	$ **6,542**	$ 10,468
-25 bps instantaneous shift	-25	-25	**(2,092)**	(2,766)
Flatteners				
Short-end instantaneous change	+100	—	**4,982**	6,321
Long-end instantaneous change	—	-25	**(735)**	(1,686)
Steepeners				
Short-end instantaneous change	-25	—	**(1,344)**	(1,084)
Long-end instantaneous change	—	+100	**1,646**	4,333

The sensitivity analysis in Table 46 assumes that we take no action in response to these rate shocks and does not assume any change in other macroeconomic variables normally correlated with changes in interest rates. As part of our ALM activities, we use securities, certain residential mortgages, and interest rate and foreign exchange derivatives in managing interest rate sensitivity.

The behavior of our deposits portfolio in the baseline forecast and in alternate interest rate scenarios is a key assumption in our projected estimates of net interest income. The sensitivity analysis in Table 46 assumes no change in

deposit portfolio size or mix from the baseline forecast in alternate rate environments. In higher rate scenarios, any customer activity resulting in the replacement of low-cost or noninterest-bearing deposits with higher yielding deposits or market-based funding would reduce our benefit in those scenarios.

Interest Rate and Foreign Exchange Derivative Contracts

We use interest rate and foreign exchange derivative contracts in our ALM activities to manage our interest rate and foreign exchange risks. Specifically, we use those derivatives to manage both the variability in cash flows and changes in fair value of various assets and liabilities arising from those risks. Our interest rate derivative contracts are generally non-leveraged swaps tied to various benchmark interest rates and foreign exchange basis swaps, options, futures and forwards, and our foreign exchange contracts include cross-currency interest rate swaps, foreign currency futures contracts, foreign currency forward contracts and options.

The derivatives used in our ALM activities can be split into two broad categories: designated accounting hedges and other risk management derivatives. Designated accounting hedges are primarily used to manage our exposure to interest rates as described in the Interest Rate Risk Management for the Banking Book section and are included in the sensitivities presented in Table 46. The Corporation also uses foreign currency derivatives in accounting hedges to manage substantially all of the foreign exchange risk of our foreign operations. By hedging the foreign exchange risk of our foreign operations, the Corporation's market risk exposure in this area is insignificant.

Risk management derivatives are predominantly used to hedge foreign exchange risks related to various foreign currency-denominated assets and liabilities and eliminate substantially all foreign currency exposures in the cash flows of the Corporation’s non-trading foreign currency-denominated financial instruments. These foreign exchange derivatives are sensitive to other market risk exposures such as cross-currency basis spreads and interest rate risk. However, as these features are not a significant component of these foreign exchange derivatives, the market risk related to this exposure is insignificant. For more information on the accounting for derivatives, see *Note 3 – Derivatives* to the Consolidated Financial Statements.

Mortgage Banking Risk Management

We originate, fund and service mortgage loans, which subject us to credit, liquidity and interest rate risks, among others. We determine whether loans will be held for investment or held for sale at the time of commitment and manage credit and liquidity risks by selling or securitizing a portion of the loans we originate.

Interest rate risk and market risk can be substantial in the mortgage business. Changes in interest rates and other market factors impact the volume of mortgage originations. Changes in interest rates also impact the value of interest rate lock commitments (IRLCs) and the related residential first mortgage LHFS between the date of the IRLC and the date the loans are sold to the secondary market. An increase in mortgage interest rates typically leads to a decrease in the value of these instruments. Conversely, when there is an increase in interest rates, the value of the MSRs will increase driven by lower prepayment expectations. Because the interest rate risks of these hedged items offset, we combine them into one overall hedged item with one combined economic hedge portfolio consisting of derivative contracts and securities.

During 2021, 2020 and 2019, we recorded gains of $39 million, $321 million and $291 million. For more information on MSRs, see *Note 20 – Fair Value Measurements* to the Consolidated Financial Statements.

Compliance and Operational Risk Management

Compliance risk is the risk of legal or regulatory sanctions, material financial loss or damage to the reputation of the Corporation arising from the failure of the Corporation to comply with the requirements of applicable laws, rules, regulations and our internal policies and procedures (collectively, applicable laws, rules and regulations). We are subject to comprehensive regulation under federal and state laws, rules and regulations in the U.S. and the laws of the various jurisdictions in which we operate, including those related to financial crimes and anti-money laundering, market conduct, trading activities, fair lending, privacy, data protection and unfair, deceptive or abusive acts or practices.

Operational risk is the risk of loss resulting from inadequate or failed processes or systems, people or external events, and includes legal risk. Operational risk may occur anywhere in the Corporation, including third-party business processes, and is not limited to operations functions. The Corporation faces a number of key operational risks including third-party risk, model risk, conduct risk, technology risk, information security risk and data risk. Operational risk can result in financial losses and reputational impacts and is a component in the calculation of total RWA used in the Basel 3 capital calculation. For more information on Basel 3 calculations, see Capital Management on page 88.

FLUs and control functions are first and foremost responsible for managing all aspects of their businesses, including their compliance and operational risk. FLUs and control functions are required to understand their business processes and related risks and controls, including third-party dependencies and the related regulatory requirements, and monitor and report on the effectiveness of the control environment. In order to actively monitor and assess the performance of their processes and controls, they must conduct comprehensive quality assurance activities and identify issues and risks to remediate control gaps and weaknesses. FLUs and control functions must also adhere to compliance and operational risk appetite limits to meet strategic, capital and financial planning objectives. Finally, FLUs and control functions are responsible for the proactive identification, management and escalation of compliance and operational risks across the Corporation. Collectively, these efforts are important to strengthen their compliance and operational resiliency, which is the ability to deliver critical operations through disruption.

Global Compliance and Operational Risk teams independently assess compliance and operational risk, monitor business activities and processes and evaluate FLUs and control functions for adherence to applicable laws, rules and regulations, including identifying issues and risks, determining and developing tests to be conducted by the Enterprise Independent Testing unit and reporting on the state of the control environment. Enterprise Independent Testing, an independent testing function within GRM, works with Global Compliance and Operational Risk, the FLUs and control functions in the identification of testing needs and test design, and is accountable for test execution, reporting and analysis of results. Corporate Audit provides an independent assessment and validation through testing of key compliance and operational risk processes and controls across the Corporation.

The Corporation's Global Compliance Enterprise Policy and Operational Risk Management – Enterprise Policy set the requirements for reporting compliance and operational risk information to executive management as well as the Board or appropriate Board-level committees and reflect Global Compliance and Operational Risk's responsibilities for conducting independent oversight of the Corporation's compliance and operational risk management activities. The Board provides oversight of compliance risk through its Audit Committee and the ERC, and operational risk through its ERC.

A key operational risk facing the Corporation is information security, which includes cybersecurity. Cybersecurity risk represents, among other things, exposure to failures or interruptions of service or breaches of security, including as a result of malicious technological attacks, that impact the confidentiality, availability or integrity of our or third parties' operations, systems or data. The Corporation seeks to mitigate information security risk and associated reputational and compliance risk by employing a multi-layered and intelligence-led Global Information Security Program, which is focused on preparing for, preventing, detecting, mitigating, responding to and recovering from cyber threats and incidents and ensuring the Corporation's processes operate effectively and mitigate the aforementioned risks.

The Global Information Security Program is supported by three lines of defense. The Global Information Security Team within the first line of defense is responsible for the day-to-day management of the Global Information Security Program, which includes defining policies and procedures to safeguard the Corporation's information systems and data, conducting vulnerability and third-party information security assessments, information security event management (e.g., responding to ransomware and distributed denial of service attacks), evaluation of external cyber intelligence, supporting industry cybersecurity efforts and working with governmental agencies, as well as developing employee training to support adherence to the Corporation's policies and procedures. As the second line of defense, Global Compliance and Operational Risk independently assesses, monitors and tests information security risk across the Corporation as well as the effectiveness of the Global Information Security Program. Corporate Audit serves as the third line of defense, conducting additional independent review and validation of the first line processes and functions.

Through established governance structures, we have processes to help facilitate appropriate and effective oversight of information security risk. These routines enable our three lines of defense and management to debate information security risks and monitor control performance to allow for further escalation to executive management, management and Board-level committees or to the Board, as appropriate. The Board is actively engaged in the oversight of Bank of America's Global Information Security Program, primarily through the ERC.

Reputational Risk Management

Reputational risk is the risk that negative perception of the Corporation may adversely impact profitability or operations. Reputational risk may result from many of the Corporation's activities, including those related to the management of our strategic, operational, compliance and credit risks.

The Corporation manages reputational risk through established policies and controls embedded throughout its business and risk management processes. We proactively monitor and identify potential reputational risk events and have processes established to mitigate reputational risks in a timely manner. If reputational risk events occur, we focus on remediating the underlying issue and taking action to minimize damage to the Corporation's reputation. The Corporation has processes and procedures in place to respond to events that give rise to reputational risk, including educating individuals and organizations that influence public opinion, implementing external communication strategies to mitigate the risk, and informing key stakeholders of potential reputational risks. The Corporation's organization and governance structure provides oversight of reputational risks. Reputational risk reporting is provided regularly and directly to management and the ERC, which provides primary oversight of reputational risk. In addition, each FLU has a committee, which includes representatives from Legal and Risk, that is responsible for the oversight of reputational risk, including approval for business activities that present elevated levels of reputational risks.

Climate Risk Management

Climate-related risks are divided into two major categories: (1) risks related to the transition to a low-carbon economy, which may entail extensive policy, legal, technology and market changes, and (2) risks related to the physical impacts of climate change, driven by extreme weather events, such as hurricanes and floods, as well as chronic longer-term shifts, such as rising average global temperatures and sea-level rise. These changes and events can have broad impacts on operations, supply chains, distribution networks, customers and markets and are otherwise referred to, respectively, as transition risk and physical risk. These risks can impact both financial and nonfinancial risk types. The impacts of transition risk can lead to and amplify credit risk or market risk by reducing our customers' operating income or the value of their assets as well as expose us to reputational and/or litigation risk due to increased regulatory scrutiny or negative public sentiment. Physical risk can lead to increased credit risk by diminishing borrowers' repayment capacity or impacting the value of collateral. In addition, it could pose increased operational risk to our facilities and people.

Effective management of climate risk requires coordinated governance, clearly defined roles and responsibilities and well-developed processes to identify, measure, monitor and control risks. We continue to build out and enhance our climate risk management capabilities. As climate risk is interconnected with all key risk types, we have developed and continue to enhance processes to embed climate risk considerations into our Risk Framework and risk management programs established for strategic, credit, market, liquidity, compliance, operational and reputational risks. Our Environmental and Social Risk Policy Framework (ESRPF) aligns with our Risk Framework and provides additional clarity and transparency regarding our approach to environmental and social risks, inclusive of climate risk.

Our governance framework establishes oversight of climate risk practices and strategies by the Board, supported by its Corporate Governance, ESG, and Sustainability Committee and ERC, as well as the MRC and the Global ESG Committee, both of which are management-level committees comprised of senior leaders across every major FLU and control function.

Our climate risk management efforts are overseen by the Global Climate Risk Executive who reports to the CRO. The Global Climate Risk Executive chairs the Climate Risk Steering Council, which meets monthly and shapes our approach to managing climate-related risks in line with our Risk Framework.

As outlined in our ESRPF, we are focused on supporting and financing areas critical to the transition to a low-carbon economy. Accordingly, we have a goal, publicly announced in early 2021, to achieve net zero greenhouse gas emissions in our financing activities, operations and supply chain before 2050 (Net Zero Goal). More broadly, achieving this goal will require technological advances, clearly defined roadmaps for industry sectors, public policies, and better emissions data reporting, as well as ongoing, strong and active engagement with clients, suppliers, investors, government officials and other stakeholders.

Our progress towards achieving our Net Zero Goal is based on establishing the baseline for emissions associated with our financing activities often referred to as financed emissions. Currently, we are using the Partnership for Carbon Accounting Financials methodology to assess our financed emissions. Additionally, given the urgency required to address climate change, we helped to launch the Net Zero Banking Alliance (NZBA) in April 2021, which outlines guidelines for banks to achieve net zero greenhouse gas emissions including requirements for setting interim targets. As a member of NZBA, the Corporation and more than 100 other financial institution members representing more than 40 percent of the world's banking assets, have committed to set emission reduction targets for 2030. We plan to begin disclosure of financed emissions by 2023, and set 2030 targets for the significant majority of emissions in our portfolio.

In 2021, we also announced a goal to deploy $1 trillion by 2030 to accelerate the transition to a low-carbon, sustainable economy by providing lending, capital raising, advisory and investment services, and by developing other client-driven financial solutions. This commitment anchors a broader $1.5 trillion sustainable finance goal to support both environmental transition and social inclusive development, which spans business activities across the globe. These goals are intended to help drive business opportunities and enhance risk management related to the transition to a low-carbon economy.

For more information about climate risk, see the Bank of America website. For more information about the Corporation's climate-related goals and commitments, including emissions associated with our operations and supply chain and progress on our sustainable finance goals, see the Corporation's 2021 Annual Report to shareholders that will be available on the Investor Relations portion of our website in March 2022. The contents of the Corporation's website and 2021 Annual Report to shareholders are not incorporated by reference into this Annual Report on Form 10-K.

The foregoing discussion and our discussion in the 2021 Annual Report to shareholders regarding our goals and commitments with respect to climate risk management, including environmental transition considerations, include "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are not guarantees of future results or performance and involve certain known and unknown risks, uncertainties and assumptions that are difficult to predict and are often beyond the Corporation's control. Actual outcomes and results may differ materially from those expressed in, or implied by, any of these forward-looking statements.

Complex Accounting Estimates

Our significant accounting principles, as described in *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements, are essential in understanding the MD&A. Many of our significant accounting principles require complex judgments to estimate the values of assets and liabilities. We have procedures and processes in place to facilitate making these judgments.

The more judgmental estimates are summarized in the following discussion. We have identified and described the development of the variables most important in the estimation processes that involve mathematical models to derive the estimates. In many cases, there are numerous alternative judgments that could be used in the process of determining the inputs to the models. Where alternatives exist, we have used the factors that we believe represent the most reasonable value in developing the inputs. Actual performance that differs from our estimates of the key variables could materially impact our results of operations. Separate from the possible future impact to our results of operations from input and model variables, the value of our lending portfolio and market-sensitive assets and liabilities may change subsequent to the balance sheet date, often significantly, due to the nature and magnitude of future credit and market conditions. Such credit and market conditions may change quickly and in unforeseen ways and the resulting volatility could have a significant, negative effect on future operating results. These fluctuations would not be indicative of deficiencies in our models or inputs.

Allowance for Credit Losses

The allowance for credit losses includes the allowance for loan and lease losses and the reserve for unfunded lending commitments. Our process for determining the allowance for credit losses is discussed in *Note 1 – Summary of Significant Accounting Principles* and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements.

The determination of allowance for credit losses is based on numerous estimates and assumptions, which require a high degree of judgment and are often interrelated. A critical judgment in the process is the weighting of our forward-looking macroeconomic scenarios that are incorporated into our quantitative models. As any one economic outlook is inherently uncertain, the Corporation uses multiple macroeconomic scenarios in its expected credit losses (ECL) calculation, which have included a baseline scenario, which is derived from consensus estimates, downside scenarios, a tail risk scenario similar to the severely adverse scenario used in stress testing and an upside scenario. Beginning in 2020, the scenarios incorporated the potential impacts of the pandemic and, beginning in the second quarter in 2021, an additional scenario was added to account for inflationary risk and higher interest rates. Generally, as the consensus estimates improve or deteriorate, the allowance for credit losses will change in a similar direction.

There are multiple variables that drive the macroeconomic scenarios with the key variables including, but not limited to, U.S. gross domestic product (GDP) and unemployment rates. As of December 31, 2020, the weighted macroeconomic outlook for U.S. average unemployment rate was forecasted at 6.6 percent, 5.5 percent and 5.0 percent in the fourth quarters of 2021, 2022 and 2023, respectively, and the weighted macroeconomic outlook for U.S. GDP was forecasted to grow at 2.5 percent, 2.4 percent and 2.1 percent year-over-year in the fourth quarters of 2021, 2022 and 2023, respectively. As of December 31, 2021 the latest consensus estimates for the U.S. average unemployment rate for the fourth quarter of 2021 was 4.4 percent and U.S. GDP was forecasted to grow 5.2 percent year-over-year in the fourth quarter of 2021, both of which were meaningfully better than our macroeconomic outlook as of December 31, 2020 and were factored into our December 31, 2021 allowance for credit losses estimate. In addition, as of December 31, 2021, the weighted macroeconomic outlook for the U.S. average unemployment rate was forecasted at 5.2 percent and 4.7 percent in the fourth quarters of 2022 and 2023, and the weighted macroeconomic outlook for U.S. GDP was forecasted to grow 2.1 percent and 1.9 percent year-over-year in the fourth quarters of 2022 and 2023.

In addition to the above judgments and estimates, the allowance for credit losses can also be impacted by unanticipated changes in asset quality of the portfolio, such as increases or decreases in credit and/or internal risk ratings in our commercial portfolio, improvement or deterioration in borrower delinquencies or credit scores in our credit card portfolio and increases or decreases in home prices, which is a primary driver of LTVs, in our consumer real estate portfolio, all of which have some degree of uncertainty. As the macroeconomic outlook improved in 2021, along with improvements in asset quality, the allowance for credit losses decreased to $13.8 billion from $20.7 billion at December 31, 2020.

To provide an illustration of the sensitivity of the macroeconomic scenarios and other assumptions on the estimate of our allowance for credit losses, the Corporation compared the December 31, 2021 modeled ECL from the baseline scenario and our downside scenario. Relative to the baseline scenario, the downside scenario assumed a peak U.S. unemployment rate of approximately three percentage points higher than the consensus outlook, a decline in U.S. GDP followed by a prolonged recovery and a lower home price outlook with a difference of 14 percent at the trough. This sensitivity analysis resulted in a hypothetical increase in the allowance for credit losses of approximately $5 billion.

While the sensitivity analysis may be useful to understand how changes in macroeconomic assumptions could impact our modeled ECLs, it is not meant to forecast how our allowance for credit losses is expected to change in a different macroeconomic outlook. Importantly, the analysis does not incorporate a variety of factors, including qualitative reserves and the weighting of alternate scenarios, which could have offsetting effects on the estimate. Considering the variety of factors contemplated when developing and weighting macroeconomic outlooks such as recent economic events, leading economic indicators, views of internal and third-party economists and industry trends, in addition to other qualitative factors, the Corporation believes the allowance for credit losses at December 31, 2021 is appropriate.

Fair Value of Financial Instruments

Under applicable accounting standards, we are required to maximize the use of observable inputs and minimize the use of unobservable inputs in measuring fair value. We classify fair value measurements of financial instruments and MSRs based on the three-level fair value hierarchy in the accounting standards.

The fair values of assets and liabilities may include adjustments, such as market liquidity and credit quality, where appropriate. Valuations of products using models or other techniques are sensitive to assumptions used for the significant inputs. Where market data is available, the inputs used for valuation reflect that information as of our valuation date. Inputs to valuation models are considered unobservable if they are supported by little or no market activity. In periods of extreme volatility, lessened liquidity or in illiquid markets, there may be more variability in market pricing or a lack of market data to use in the valuation process. In keeping with the prudent application of estimates and management judgment in determining the fair value of assets and liabilities, we have in place various processes and controls that include: a model validation policy that requires review and approval of quantitative models used for deal pricing, financial statement fair value determination and risk quantification; a trading product valuation policy that requires verification of all traded product valuations; and a periodic review and substantiation of daily profit and loss

reporting for all traded products. Primarily through validation controls, we utilize both broker and pricing service inputs which can and do include both market-observable and internally-modeled values and/or valuation inputs. Our reliance on this information is affected by our understanding of how the broker and/or pricing service develops its data with a higher degree of reliance applied to those that are more directly observable and lesser reliance applied to those developed through their own internal modeling. For example, broker quotes in less active markets may only be indicative and therefore less reliable. These processes and controls are performed independently of the business. For more information, see *Note 20 – Fair Value Measurements* and *Note 21 – Fair Value Option* to the Consolidated Financial Statements.

Level 3 Assets and Liabilities

Financial assets and liabilities, and MSRs, where values are based on valuation techniques that require inputs that are both unobservable and are significant to the overall fair value measurement are classified as Level 3 under the fair value hierarchy established in applicable accounting standards. The fair value of these Level 3 financial assets and liabilities and MSRs is determined using pricing models, discounted cash flow methodologies or similar techniques for which the determination of fair value requires significant management judgment or estimation.

Level 3 financial instruments may be hedged with derivatives classified as Level 1 or 2; therefore, gains or losses associated with Level 3 financial instruments may be offset by gains or losses associated with financial instruments classified in other levels of the fair value hierarchy. The Level 3 gains and losses recorded in earnings did not have a significant impact on our liquidity or capital. We conduct a review of our fair value hierarchy classifications on a quarterly basis. Transfers into or out of Level 3 are made if the significant inputs used in the financial models measuring the fair values of the assets and liabilities became unobservable or observable, respectively, in the current marketplace. For more information on transfers into and out of Level 3 during 2021, 2020 and 2019, see *Note 20 – Fair Value Measurements* to the Consolidated Financial Statements.

Accrued Income Taxes and Deferred Tax Assets

Accrued income taxes, reported as a component of either other assets or accrued expenses and other liabilities on the Consolidated Balance Sheet, represent the net amount of current income taxes we expect to pay to or receive from various taxing jurisdictions attributable to our operations to date. We currently file income tax returns in more than 100 jurisdictions and consider many factors, including statutory, judicial and regulatory guidance, in estimating the appropriate accrued income taxes for each jurisdiction.

Net deferred tax assets, reported as a component of other assets on the Consolidated Balance Sheet, represent the net decrease in taxes expected to be paid in the future because of net operating loss (NOL) and tax credit carryforwards and because of future reversals of temporary differences in the bases of assets and liabilities as measured by tax laws and their bases as reported in the financial statements. NOL and tax credit carryforwards result in reductions to future tax liabilities, and many of these attributes can expire if not utilized within certain periods. We consider the need for valuation allowances to reduce net deferred tax assets to the amounts that we estimate are more likely than not to be realized.

Consistent with the applicable accounting guidance, we monitor relevant tax authorities and change our estimates of accrued income taxes and/or net deferred tax assets due to changes in income tax laws and their interpretation by the courts and regulatory authorities. These revisions of our estimates, which also may result from our income tax planning and from the resolution of income tax audit matters, may be material to our operating results for any given period.

See *Note 19 – Income Taxes* to the Consolidated Financial Statements for a table of significant tax attributes and additional information. For more information see Item 1A. Risk Factors of our 2021 Annual Report on Form 10-K.

Goodwill and Intangible Assets

The nature of and accounting for goodwill and intangible assets are discussed in *Note 1 – Summary of Significant Accounting Principles*, and *Note 7 – Goodwill and Intangible Assets* to the Consolidated Financial Statements.

We completed our annual goodwill impairment test as of June 30, 2021 by using a qualitative assessment to determine whether it was more likely than not that the fair value of each reporting unit was less than its respective carrying value. Factors considered in the qualitative assessment included, among other things, macroeconomic conditions, industry and market considerations, financial performance of the respective reporting unit and other relevant entity- and reporting-unit specific considerations. Based on our qualitative assessment, we have concluded that it was not "more likely than not" that the reporting units' fair values were less than their carrying values.

Certain Contingent Liabilities

For more information on the complex judgments associated with certain contingent liabilities, see *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

Non-GAAP Reconciliations

Tables 47 and 48 provide reconciliations of certain non-GAAP financial measures to GAAP financial measures.

Table 47 Annual Reconciliations to GAAP Financial Measures [(1)]

(Dollars in millions, shares in thousands)	**2021**	2020	2019
Reconciliation of average shareholders' equity to average tangible shareholders' equity and average tangible common shareholders' equity			
Shareholders' equity	**$ 273,757**	$ 267,309	$ 267,889
Goodwill	**(69,005)**	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,177)**	(1,862)	(1,721)
Related deferred tax liabilities	**916**	821	773
Tangible shareholders' equity	**$ 203,491**	$ 197,317	$ 197,990
Preferred stock	**(23,970)**	(23,624)	(23,036)
Tangible common shareholders' equity	**$ 179,521**	$ 173,693	$ 174,954
Reconciliation of year-end shareholders' equity to year-end tangible shareholders' equity and year-end tangible common shareholders' equity			
Shareholders' equity	**$ 270,066**	$ 272,924	$ 264,810
Goodwill	**(69,022)**	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,153)**	(2,151)	(1,661)
Related deferred tax liabilities	**929**	920	713
Tangible shareholders' equity	**$ 199,820**	$ 202,742	$ 194,911
Preferred stock	**(24,708)**	(24,510)	(23,401)
Tangible common shareholders' equity	**$ 175,112**	$ 178,232	$ 171,510
Reconciliation of year-end assets to year-end tangible assets			
Assets	**$ 3,169,495**	$2,819,627	$2,434,079
Goodwill	**(69,022)**	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,153)**	(2,151)	(1,661)
Related deferred tax liabilities	**929**	920	713
Tangible assets	**$ 3,099,249**	$2,749,445	$2,364,180

(1) Presents reconciliations of non-GAAP financial measures to GAAP financial measures. For more information on non-GAAP financial measures and ratios we use in assessing the results of the Corporation, see Supplemental Financial Data on page 70.

Table 48 Quarterly Reconciliations to GAAP Financial Measures [(1)]

	2021 Quarters				2020 Quarters			
(Dollars in millions)	**Fourth**	Third	Second	First	Fourth	Third	Second	First
Reconciliation of average shareholders' equity to average tangible shareholders' equity and average tangible common shareholders' equity								
Shareholders' equity	**$ 270,883**	$ 275,484	$ 274,632	$ 274,047	$ 271,020	$ 267,323	$ 266,316	$ 264,534
Goodwill	**(69,022)**	(69,023)	(69,023)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,166)**	(2,185)	(2,212)	(2,146)	(2,173)	(1,976)	(1,640)	(1,655)
Related deferred tax liabilities	**913**	915	915	920	910	855	790	728
Tangible shareholders' equity	**$ 200,608**	$ 205,191	$ 204,312	$ 203,870	$ 200,806	$ 197,251	$ 196,515	$ 194,656
Preferred stock	**(24,364)**	(23,441)	(23,684)	(24,399)	(24,180)	(23,427)	(23,427)	(23,456)
Tangible common shareholders' equity	**$ 176,244**	$ 181,750	$ 180,628	$ 179,471	$ 176,626	$ 173,824	$ 173,088	$ 171,200
Reconciliation of period-end shareholders' equity to period-end tangible shareholders' equity and period-end tangible common shareholders' equity								
Shareholders' equity	**$ 270,066**	$ 272,464	$ 277,119	$ 274,000	$ 272,924	$ 268,850	$ 265,637	$ 264,918
Goodwill	**(69,022)**	(69,023)	(69,023)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,153)**	(2,172)	(2,192)	(2,134)	(2,151)	(2,185)	(1,630)	(1,646)
Related deferred tax liabilities	**929**	913	915	915	920	910	789	790
Tangible shareholders' equity	**$ 199,820**	$ 202,182	$ 206,819	$ 203,830	$ 202,742	$ 198,624	$ 195,845	$ 195,111
Preferred stock	**(24,708)**	(23,441)	(23,441)	(24,319)	(24,510)	(23,427)	(23,427)	(23,427)
Tangible common shareholders' equity	**$ 175,112**	$ 178,741	$ 183,378	$ 179,511	$ 178,232	$ 175,197	$ 172,418	$ 171,684
Reconciliation of period-end assets to period-end tangible assets								
Assets	**$3,169,495**	$3,085,446	$3,029,894	$2,969,992	$2,819,627	$2,738,452	$2,741,688	$2,619,954
Goodwill	**(69,022)**	(69,023)	(69,023)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,153)**	(2,172)	(2,192)	(2,134)	(2,151)	(2,185)	(1,630)	(1,646)
Related deferred tax liabilities	**929**	913	915	915	920	910	789	790
Tangible assets	**$3,099,249**	$3,015,164	$2,959,594	$2,899,822	$2,749,445	$2,668,226	$2,671,896	$2,550,147

(1) Presents reconciliations of non-GAAP financial measures to GAAP financial measures. For more information on non-GAAP financial measures and ratios we use in assessing the results of the Corporation, see Supplemental Financial Data on page 70.

Financial Statements and Notes
Table of Contents

Report of Management on Internal Control Over Financial Reporting

Bank of America Corporation and Subsidiaries

The management of Bank of America Corporation is responsible for establishing and maintaining adequate internal control over financial reporting.

The Corporation's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. The Corporation's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Corporation; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the Corporation are being made only in accordance with authorizations of management and directors of the Corporation; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Corporation's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2021 based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control – Integrated Framework (2013)*. Based on that assessment, management concluded that, as of December 31, 2021, the Corporation's internal control over financial reporting is effective.

The Corporation's internal control over financial reporting as of December 31, 2021 has been audited by PricewaterhouseCoopers, LLP, an independent registered public accounting firm, as stated in their accompanying report which expresses an unqualified opinion on the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2021.

Brian T. Moynihan
Chair, Chief Executive Officer and President

Alastair M. Borthwick
Chief Financial Officer

Report of Independent Registered Public Accounting Firm

Bank of America Corporation and Subsidiaries

To the Board of Directors and Shareholders of Bank of America Corporation:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Bank of America Corporation and its subsidiaries (the "Corporation") as of December 31, 2021 and 2020, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Corporation's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Corporation as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 5 to the consolidated financial statements, the Corporation changed the manner in which it accounts for credit losses on certain financial instruments in 2020.

Basis for Opinions

The Corporation's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report of Management on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Corporation's consolidated financial statements and on the Corporation's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Allowance for Loan and Lease Losses - Commercial and Consumer Card Loans

As described in Notes 1 and 5 to the consolidated financial statements, the allowance for loan and lease losses represents management's estimate of the expected credit losses in the

Corporation's loan and lease portfolio, excluding loans and unfunded lending commitments accounted for under the fair value option. As of December 31, 2021, the allowance for loan and lease losses was $12.4 billion on total loans and leases of $971.3 billion, which excludes loans accounted for under the fair value option. For commercial and consumer card loans, the expected credit loss is typically estimated using quantitative methods that consider a variety of factors such as historical loss experience, the current credit quality of the portfolio as well as an economic outlook over the life of the loan. In its loss forecasting framework, the Corporation incorporates forward looking information through the use of macroeconomic scenarios applied over the forecasted life of the assets. These macroeconomic scenarios include variables that have historically been key drivers of increases and decreases in credit losses. These variables include, but are not limited to, unemployment rates, real estate prices, gross domestic product levels and corporate bond spreads. The scenarios that are chosen and the weighting given to each scenario depend on a variety of factors including recent economic events, leading economic indicators, views of internal as well as third-party economists and industry trends. Also included in the allowance for loan and lease losses are qualitative reserves to cover losses that are expected but, in the Corporation's assessment, may not be adequately reflected in the quantitative methods or the economic assumptions. Factors that the Corporation considers include changes in lending policies and procedures, business conditions, the nature and size of the portfolio, portfolio concentrations, the volume and severity of past due loans and nonaccrual loans, the effect of external factors such as competition, and legal and regulatory requirements, among others. Further, the Corporation considers the inherent uncertainty in quantitative models that are built on historical data.

The principal considerations for our determination that performing procedures relating to the allowance for loan and lease losses for the commercial and consumer card portfolios is a critical audit matter are (i) the significant judgment and estimation by management in developing lifetime economic forecast scenarios, related weightings to each scenario and certain qualitative reserves, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and in evaluating audit evidence obtained, and (ii) the audit effort involved professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the allowance for loan and lease losses, including controls over the evaluation and approval of models, forecast scenarios and related weightings, and qualitative reserves. These procedures also included, among others, testing management's process for estimating the allowance for loan and lease losses, including (i) evaluating the appropriateness of the loss forecast models and methodology, (ii) evaluating the reasonableness of certain macroeconomic variables, (iii) evaluating the reasonableness of management's development, selection and weighting of lifetime economic forecast scenarios used in the loss forecast models, (iv) testing the completeness and accuracy of data used in the estimate, and (v) evaluating the reasonableness of certain qualitative reserves made to the model output results to determine the overall allowance for loan and lease losses. The procedures also included the involvement of professionals with specialized skill and knowledge to assist in evaluating the appropriateness of certain loss forecast models, the reasonableness of economic forecast scenarios and related weightings and the reasonableness of certain qualitative reserves.

Valuation of Certain Level 3 Financial Instruments

As described in Notes 1 and 20 to the consolidated financial statements, the Corporation carries certain financial instruments at fair value, which includes $10.7 billion of assets and $6.9 billion of liabilities classified as Level 3 fair value measurements that are valued on a recurring basis and $2.3 billion of assets classified as Level 3 fair value measurements that are valued on a nonrecurring basis, for which the determination of fair value requires significant management judgment or estimation. The Corporation determines the fair value of Level 3 financial instruments using pricing models, discounted cash flow methodologies, or similar techniques that require inputs that are both unobservable and are significant to the overall fair value measurement. Unobservable inputs, such as volatility or price, may be determined using quantitative-based extrapolations or other internal methodologies which incorporate management estimates and available market information.

The principal considerations for our determination that performing procedures relating to the valuation of certain Level 3 financial instruments is a critical audit matter are the significant judgment and estimation used by management to determine the fair value of these financial instruments, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and in evaluating audit evidence obtained, including the involvement of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of financial instruments, including controls related to valuation models, significant unobservable inputs, and data. These procedures also included, among others, the involvement of professionals with specialized skill and knowledge to assist in developing an independent estimate of fair value for a sample of these certain financial instruments and comparison of management's estimate to the independently developed estimate of fair value. Developing the independent estimate involved testing the completeness and accuracy of data provided by management and evaluating the reasonableness of management's significant unobservable inputs.

PricewaterhouseCoopers LLP

Charlotte, North Carolina
February 22, 2022

We have served as the Corporation's auditor since 1958.

Consolidated Statement of Income

(In millions, except per share information)	2021	2020	2019
Net interest income			
Interest income	$ 47,672	$ 51,585	$ 71,236
Interest expense	4,738	8,225	22,345
Net interest income	42,934	43,360	48,891
Noninterest income			
Fees and commissions	39,299	34,551	33,015
Market making and similar activities	8,691	8,355	9,034
Other income	(1,811)	(738)	304
Total noninterest income	46,179	42,168	42,353
Total revenue, net of interest expense	89,113	85,528	91,244
Provision for credit losses	(4,594)	11,320	3,590
Noninterest expense			
Compensation and benefits	36,140	32,725	31,977
Occupancy and equipment	7,138	7,141	6,588
Information processing and communications	5,769	5,222	4,646
Product delivery and transaction related	3,881	3,433	2,762
Marketing	1,939	1,701	1,934
Professional fees	1,775	1,694	1,597
Other general operating	3,089	3,297	5,396
Total noninterest expense	59,731	55,213	54,900
Income before income taxes	33,976	18,995	32,754
Income tax expense	1,998	1,101	5,324
Net income	$ 31,978	$ 17,894	$ 27,430
Preferred stock dividends	1,421	1,421	1,432
Net income applicable to common shareholders	$ 30,557	$ 16,473	$ 25,998
Per common share information			
Earnings	$ 3.60	$ 1.88	$ 2.77
Diluted earnings	3.57	1.87	2.75
Average common shares issued and outstanding	8,493.3	8,753.2	9,390.5
Average diluted common shares issued and outstanding	8,558.4	8,796.9	9,442.9

Consolidated Statement of Comprehensive Income

(Dollars in millions)	2021	2020	2019
Net income	$ 31,978	$ 17,894	$ 27,430
Other comprehensive income (loss), net-of-tax:			
Net change in debt securities	(2,077)	4,799	5,875
Net change in debit valuation adjustments	356	(498)	(963)
Net change in derivatives	(2,306)	826	616
Employee benefit plan adjustments	624	(98)	136
Net change in foreign currency translation adjustments	(45)	(52)	(86)
Other comprehensive income (loss)	(3,448)	4,977	5,578
Comprehensive income	$ 28,530	$ 22,871	$ 33,008

See accompanying Notes to Consolidated Financial Statements.

Consolidated Balance Sheet

(Dollars in millions)	December 31 2021	2020
Assets		
Cash and due from banks	$ **29,222**	$ 36,430
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	**318,999**	344,033
Cash and cash equivalents	**348,221**	380,463
Time deposits placed and other short-term investments	**7,144**	6,546
Federal funds sold and securities borrowed or purchased under agreements to resell (includes **$150,665** and $108,856 measured at fair value)	**250,720**	304,058
Trading account assets (includes **$103,434** and $91,510 pledged as collateral)	**247,080**	198,854
Derivative assets	**35,344**	47,179
Debt securities:		
Carried at fair value	**308,073**	246,601
Held-to-maturity, at cost (fair value – **$665,890** and $448,180)	**674,554**	438,249
Total debt securities	**982,627**	684,850
Loans and leases (includes **$7,819** and $6,681 measured at fair value)	**979,124**	927,861
Allowance for loan and lease losses	**(12,387)**	(18,802)
Loans and leases, net of allowance	**966,737**	909,059
Premises and equipment, net	**10,833**	11,000
Goodwill	**69,022**	68,951
Loans held-for-sale (includes **$4,455** and $1,585 measured at fair value)	**15,635**	9,243
Customer and other receivables	**72,263**	64,221
Other assets (includes **$12,144** and $15,718 measured at fair value)	**163,869**	135,203
Total assets	$ **3,169,495**	$ 2,819,627
Liabilities		
Deposits in U.S. offices:		
Noninterest-bearing	$ **784,189**	$ 650,674
Interest-bearing (includes **$408** and $481 measured at fair value)	**1,165,914**	1,038,341
Deposits in non-U.S. offices:		
Noninterest-bearing	**27,457**	17,698
Interest-bearing	**86,886**	88,767
Total deposits	**2,064,446**	1,795,480
Federal funds purchased and securities loaned or sold under agreements to repurchase (includes **$139,641** and $135,391 measured at fair value)	**192,329**	170,323
Trading account liabilities	**100,690**	71,320
Derivative liabilities	**37,675**	45,526
Short-term borrowings (includes **$4,279** and $5,874 measured at fair value)	**23,753**	19,321
Accrued expenses and other liabilities (includes **$11,489** and $16,311 measured at fair value and **$1,456** and $1,878 of reserve for unfunded lending commitments)	**200,419**	181,799
Long-term debt (includes **$29,708** and $32,200 measured at fair value)	**280,117**	262,934
Total liabilities	**2,899,429**	2,546,703
Commitments and contingencies *(Note 6 – Securitizations and Other Variable Interest Entities* and *Note 12 – Commitments and Contingencies)*		
Shareholders' equity		
Preferred stock, $0.01 par value; authorized – **100,000,000** shares; issued and outstanding – **3,939,686** and 3,931,440 shares	**24,708**	24,510
Common stock and additional paid-in capital, $0.01 par value; authorized – **12,800,000,000** shares; issued and outstanding – **8,077,831,463** and 8,650,814,105 shares	**62,398**	85,982
Retained earnings	**188,064**	164,088
Accumulated other comprehensive income (loss)	**(5,104)**	(1,656)
Total shareholders' equity	**270,066**	272,924
Total liabilities and shareholders' equity	$ **3,169,495**	$ 2,819,627

Assets of consolidated variable interest entities included in total assets above (isolated to settle the liabilities of the variable interest entities)		
Trading account assets	$ **5,004**	$ 5,225
Loans and leases	**17,135**	23,636
Allowance for loan and lease losses	**(958)**	(1,693)
Loans and leases, net of allowance	**16,177**	21,943
All other assets	**189**	1,387
Total assets of consolidated variable interest entities	$ **21,370**	$ 28,555
Liabilities of consolidated variable interest entities included in total liabilities above		
Short-term borrowings (includes **$51** and $22 of non-recourse short-term borrowings)	$ **247**	$ 454
Long-term debt (includes **$3,587** and $7,053 of non-recourse debt)	**3,587**	7,053
All other liabilities (includes **$7** and $16 of non-recourse liabilities)	**7**	16
Total liabilities of consolidated variable interest entities	$ **3,841**	$ 7,523

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statement of Changes in Shareholders' Equity

(In millions)	Preferred Stock	Common Stock and Additional Paid-in Capital Shares	Amount	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity
Balance, December 31, 2018	$ 22,326	9,669.3	$ 118,896	$ 136,314	$ (12,211)	$ 265,325
Cumulative adjustment for adoption of lease accounting standard				165		165
Net income				27,430		27,430
Net change in debt securities					5,875	5,875
Net change in debit valuation adjustments					(963)	(963)
Net change in derivatives					616	616
Employee benefit plan adjustments					136	136
Net change in foreign currency translation adjustments					(86)	(86)
Dividends declared:						
Common				(6,146)		(6,146)
Preferred				(1,432)		(1,432)
Issuance of preferred stock	3,643					3,643
Redemption of preferred stock	(2,568)					(2,568)
Common stock issued under employee plans, net, and other		123.3	971	(12)		959
Common stock repurchased		(956.5)	(28,144)			(28,144)
Balance, December 31, 2019	$ 23,401	8,836.1	$ 91,723	$ 156,319	$ (6,633)	$ 264,810
Cumulative adjustment for adoption of credit loss accounting standard				(2,406)		(2,406)
Net income				17,894		17,894
Net change in debt securities					4,799	4,799
Net change in debit valuation adjustments					(498)	(498)
Net change in derivatives					826	826
Employee benefit plan adjustments					(98)	(98)
Net change in foreign currency translation adjustments					(52)	(52)
Dividends declared:						
Common				(6,289)		(6,289)
Preferred				(1,421)		(1,421)
Issuance of preferred stock	2,181					2,181
Redemption of preferred stock	(1,072)					(1,072)
Common stock issued under employee plans, net, and other		41.7	1,284	(9)		1,275
Common stock repurchased		(227.0)	(7,025)			(7,025)
Balance, December 31, 2020	$ 24,510	8,650.8	$ 85,982	$ 164,088	$ (1,656)	$ 272,924
Net income				31,978		31,978
Net change in debt securities					(2,077)	(2,077)
Net change in debit valuation adjustments					356	356
Net change in derivatives					(2,306)	(2,306)
Employee benefit plan adjustments					624	624
Net change in foreign currency translation adjustments					(45)	(45)
Dividends declared:						
Common				(6,575)		(6,575)
Preferred				(1,421)		(1,421)
Issuance of preferred stock	2,169					2,169
Redemption of preferred stock	(1,971)					(1,971)
Common stock issued under employee plans, net, and other		42.3	1,542	(6)		1,536
Common stock repurchased		**(615.3)**	**(25,126)**			**(25,126)**
Balance, December 31, 2021	**$ 24,708**	**8,077.8**	**$ 62,398**	**$ 188,064**	**$ (5,104)**	**$ 270,066**

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statement of Cash Flows

(Dollars in millions)	2021	2020	2019
Operating activities			
Net income	$ 31,978	$ 17,894	$ 27,430
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	(4,594)	11,320	3,590
Gains on sales of debt securities	(22)	(411)	(217)
Depreciation and amortization	1,898	1,843	1,729
Net amortization of premium/discount on debt securities	5,837	4,101	2,066
Deferred income taxes	(838)	(1,737)	2,435
Stock-based compensation	2,768	2,031	1,974
Impairment of equity method investment	—	—	2,072
Loans held-for-sale:			
Originations and purchases	(43,635)	(19,657)	(28,874)
Proceeds from sales and paydowns of loans originally classified as held for sale and instruments from related securitization activities	34,684	19,049	30,191
Net change in:			
Trading and derivative assets/liabilities	(22,104)	16,942	7,920
Other assets	(34,455)	(12,883)	(11,113)
Accrued expenses and other liabilities	16,639	(4,385)	16,363
Other operating activities, net	4,651	3,886	6,211
Net cash provided by (used in) operating activities	(7,193)	37,993	61,777
Investing activities			
Net change in:			
Time deposits placed and other short-term investments	(598)	561	387
Federal funds sold and securities borrowed or purchased under agreements to resell	53,338	(29,461)	(13,466)
Debt securities carried at fair value:			
Proceeds from sales	6,893	77,524	52,006
Proceeds from paydowns and maturities	159,616	91,084	79,114
Purchases	(238,398)	(194,877)	(152,782)
Held-to-maturity debt securities:			
Proceeds from paydowns and maturities	124,880	93,835	34,770
Purchases	(362,736)	(257,535)	(37,115)
Loans and leases:			
Proceeds from sales of loans originally classified as held for investment and instruments from related securitization activities	10,396	13,351	12,201
Purchases	(5,164)	(5,229)	(5,963)
Other changes in loans and leases, net	(58,039)	36,571	(46,808)
Other investing activities, net	(3,479)	(3,489)	(2,974)
Net cash used in investing activities	(313,291)	(177,665)	(80,630)
Financing activities			
Net change in:			
Deposits	268,966	360,677	53,327
Federal funds purchased and securities loaned or sold under agreements to repurchase	22,006	5,214	(21,879)
Short-term borrowings	4,432	(4,893)	4,004
Long-term debt:			
Proceeds from issuance	76,675	57,013	52,420
Retirement	(46,826)	(47,948)	(50,794)
Preferred stock:			
Proceeds from issuance	2,169	2,181	3,643
Redemption	(1,971)	(1,072)	(2,568)
Common stock repurchased	(25,126)	(7,025)	(28,144)
Cash dividends paid	(8,055)	(7,727)	(5,934)
Other financing activities, net	(620)	(601)	(698)
Net cash provided by financing activities	291,650	355,819	3,377
Effect of exchange rate changes on cash and cash equivalents	(3,408)	2,756	(368)
Net increase (decrease) in cash and cash equivalents	(32,242)	218,903	(15,844)
Cash and cash equivalents at January 1	380,463	161,560	177,404
Cash and cash equivalents at December 31	$ 348,221	$ 380,463	$ 161,560
Supplemental cash flow disclosures			
Interest paid	$ 4,506	$ 8,662	$ 22,196
Income taxes paid, net	2,760	2,894	4,359

See accompanying Notes to Consolidated Financial Statements.

Bank of America Corporation and Subsidiaries
Notes to Consolidated Financial Statements

NOTE 1 Summary of Significant Accounting Principles

Bank of America Corporation, a bank holding company and a financial holding company, provides a diverse range of financial services and products throughout the U.S. and in certain international markets. The term "the Corporation" as used herein may refer to Bank of America Corporation, individually, Bank of America Corporation and its subsidiaries, or certain of Bank of America Corporation's subsidiaries or affiliates.

Principles of Consolidation and Basis of Presentation

The Consolidated Financial Statements include the accounts of the Corporation and its majority-owned subsidiaries and those variable interest entities (VIEs) where the Corporation is the primary beneficiary. Intercompany accounts and transactions have been eliminated. Results of operations of acquired companies are included from the dates of acquisition, and for VIEs, from the dates that the Corporation became the primary beneficiary. Assets held in an agency or fiduciary capacity are not included in the Consolidated Financial Statements. The Corporation accounts for investments in companies for which it owns a voting interest and for which it has the ability to exercise significant influence over operating and financing decisions using the equity method of accounting. These investments, which include the Corporation's interests in affordable housing and renewable energy partnerships, are recorded in other assets. Equity method investments are subject to impairment testing, and the Corporation's proportionate share of income or loss is included in other income.

The preparation of the Consolidated Financial Statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect reported amounts and disclosures. Actual results could materially differ from those estimates and assumptions. Certain prior-period amounts have been reclassified to conform to current period presentation.

Significant Accounting Principles

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, cash items in the process of collection, cash segregated under federal and other brokerage regulations, and amounts due from correspondent banks, the Federal Reserve Bank and certain non-U.S. central banks. Certain cash balances are restricted as to withdrawal or usage by legally binding contractual agreements or regulatory requirements.

Securities Financing Agreements

Securities borrowed or purchased under agreements to resell and securities loaned or sold under agreements to repurchase (securities financing agreements) are treated as collateralized financing transactions except in instances where the transaction is required to be accounted for as individual sale and purchase transactions. Generally, these agreements are recorded at acquisition or sale price plus accrued interest. In instances where the interest is negative, the Corporation's policy is to present negative interest on financial assets as interest income and negative interest on financial liabilities as interest expense. For securities financing agreements that are accounted for under the fair value option, the changes in the fair value of these securities financing agreements are recorded in market making and similar activities in the Consolidated Statement of Income.

The Corporation's policy is to monitor the market value of the principal amount loaned under resale agreements and obtain collateral from or return collateral pledged to counterparties when appropriate. Securities financing agreements do not create material credit risk due to these collateral provisions; therefore, an allowance for loan losses is not necessary.

In transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be pledged or sold as collateral, it recognizes an asset on the Consolidated Balance Sheet at fair value, representing the securities received, and a liability, representing the obligation to return those securities.

Collateral

The Corporation accepts securities and loans as collateral that it is permitted by contract or practice to sell or repledge. At December 31, 2021 and 2020, the fair value of this collateral was $854.8 billion and $812.4 billion, of which $782.7 billion and $758.5 billion were sold or repledged. The primary source of this collateral is securities borrowed or purchased under agreements to resell.

The Corporation also pledges company-owned securities and loans as collateral in transactions that include repurchase agreements, securities loaned, public and trust deposits, U.S. Treasury tax and loan notes, and short-term borrowings. This collateral, which in some cases can be sold or repledged by the counterparties to the transactions, is parenthetically disclosed on the Consolidated Balance Sheet.

In certain cases, the Corporation has transferred assets to consolidated VIEs where those restricted assets serve as collateral for the interests issued by the VIEs. These assets are included on the Consolidated Balance Sheet in Assets of Consolidated VIEs.

In addition, the Corporation obtains collateral in connection with its derivative contracts. Required collateral levels vary depending on the credit risk rating and the type of counterparty. Generally, the Corporation accepts collateral in the form of cash, U.S. Treasury securities and other marketable securities. Based on provisions contained in master netting agreements, the Corporation nets cash collateral received against derivative assets. The Corporation also pledges collateral on its own derivative positions which can be applied against derivative liabilities.

Trading Instruments

Financial instruments utilized in trading activities are carried at fair value. Fair value is generally based on quoted market prices for the same or similar assets and liabilities. If these market prices are not available, fair values are estimated based on dealer quotes, pricing models, discounted cash flow methodologies, or similar techniques where the determination of fair value may require significant management judgment or estimation. Realized gains and losses are recorded on a trade-date basis. Realized and unrealized gains and losses are recognized in market making and similar activities.

Derivatives and Hedging Activities

Derivatives are entered into on behalf of customers, for trading or to support risk management activities. Derivatives used in risk management activities include derivatives that are both designated in qualifying accounting hedge relationships and derivatives used to hedge market risks in relationships that are

not designated in qualifying accounting hedge relationships (referred to as other risk management activities). The Corporation manages interest rate and foreign currency exchange rate sensitivity predominantly through the use of derivatives. Derivatives utilized by the Corporation include swaps, futures and forward settlement contracts, and option contracts.

All derivatives are recorded on the Consolidated Balance Sheet at fair value, taking into consideration the effects of legally enforceable master netting agreements that allow the Corporation to settle positive and negative positions and offset cash collateral held with the same counterparty on a net basis. For exchange-traded contracts, fair value is based on quoted market prices in active or inactive markets or is derived from observable market-based pricing parameters, similar to those applied to over-the-counter (OTC) derivatives. For non-exchange traded contracts, fair value is based on dealer quotes, pricing models, discounted cash flow methodologies or similar techniques for which the determination of fair value may require significant management judgment or estimation.

Valuations of derivative assets and liabilities reflect the value of the instrument including counterparty credit risk. These values also take into account the Corporation's own credit standing.

Trading Derivatives and Other Risk Management Activities

Derivatives held for trading purposes are included in derivative assets or derivative liabilities on the Consolidated Balance Sheet with changes in fair value included in market making and similar activities.

Derivatives used for other risk management activities are included in derivative assets or derivative liabilities. Derivatives used in other risk management activities have not been designated in qualifying accounting hedge relationships because they did not qualify or the risk that is being mitigated pertains to an item that is reported at fair value through earnings so that the effect of measuring the derivative instrument and the asset or liability to which the risk exposure pertains will offset in the Consolidated Statement of Income to the extent effective. The changes in the fair value of derivatives that serve to mitigate certain risks associated with mortgage servicing rights (MSRs), interest rate lock commitments (IRLCs) and first-lien mortgage loans held-for-sale (LHFS) that are originated by the Corporation are recorded in other income. Changes in the fair value of derivatives that serve to mitigate interest rate risk and foreign currency risk are included in market making and similar activities. Credit derivatives are also used by the Corporation to mitigate the risk associated with various credit exposures. The changes in the fair value of these derivatives are included in market making and similar activities and other income.

Derivatives Used For Hedge Accounting Purposes (Accounting Hedges)

For accounting hedges, the Corporation formally documents at inception all relationships between hedging instruments and hedged items, as well as the risk management objectives and strategies for undertaking various accounting hedges. Additionally, the Corporation primarily uses regression analysis at the inception of a hedge and for each reporting period thereafter to assess whether the derivative used in an accounting hedge transaction is expected to be and has been highly effective in offsetting changes in the fair value or cash flows of a hedged item or forecasted transaction. The Corporation discontinues hedge accounting when it is determined that a derivative is not expected to be or has ceased to be highly effective as a hedge, and then reflects changes in fair value of the derivative in earnings after termination of the hedge relationship.

Fair value hedges are used to protect against changes in the fair value of the Corporation's assets and liabilities that are attributable to interest rate or foreign exchange volatility. Changes in the fair value of derivatives designated as fair value hedges are recorded in earnings, together and in the same income statement line item with changes in the fair value of the related hedged item. If a derivative instrument in a fair value hedge is terminated or the hedge designation removed, the previous adjustments to the carrying value of the hedged asset or liability are subsequently accounted for in the same manner as other components of the carrying value of that asset or liability. For interest-earning assets and interest-bearing liabilities, such adjustments are amortized to earnings over the remaining life of the respective asset or liability.

Cash flow hedges are used primarily to minimize the variability in cash flows of assets and liabilities or forecasted transactions caused by interest rate or foreign exchange rate fluctuations. The Corporation also uses cash flow hedges to hedge the price risk associated with deferred compensation. Changes in the fair value of derivatives used in cash flow hedges are recorded in accumulated other comprehensive income (OCI) and are reclassified into the line item in the income statement in which the hedged item is recorded in the same period the hedged item affects earnings. Components of a derivative that are excluded in assessing hedge effectiveness are recorded in the same income statement line item as the hedged item.

Net investment hedges are used to manage the foreign exchange rate sensitivity arising from a net investment in a foreign operation. Changes in the spot prices of derivatives that are designated as net investment hedges of foreign operations are recorded as a component of accumulated OCI. The remaining components of these derivatives are excluded in assessing hedge effectiveness and are recorded in market making and similar activities.

Securities

Debt securities are reported on the Consolidated Balance Sheet at their trade date. Their classification is dependent on the purpose for which the securities were acquired. Debt securities purchased for use in the Corporation's trading activities are reported in trading account assets at fair value with unrealized gains and losses included in market making and similar activities. Substantially all other debt securities purchased are used in the Corporation's asset and liability management (ALM) activities and are reported on the Consolidated Balance Sheet as either debt securities carried at fair value or as held-to-maturity (HTM) debt securities. Debt securities carried at fair value are either available-for-sale (AFS) securities with unrealized gains and losses net-of-tax included in accumulated OCI or carried at fair value with unrealized gains and losses reported in market making and similar activities. HTM debt securities are debt securities that management has the intent and ability to hold to maturity and are reported at amortized cost.

The Corporation evaluates each AFS security where the value has declined below amortized cost. If the Corporation intends to sell or believes it is more likely than not that it will be required to sell the debt security, it is written down to fair value through earnings. For AFS debt securities the Corporation intends to hold, the Corporation evaluates the debt securities for expected credit losses (ECL), except for debt securities that are

guaranteed by the U.S. Treasury, U.S. government agencies or sovereign entities of high credit quality where the Corporation applies a zero credit loss assumption. For the remaining AFS debt securities, the Corporation considers qualitative parameters such as internal and external credit ratings and the value of underlying collateral. If an AFS debt security fails any of the qualitative parameters, a discounted cash flow analysis is used by the Corporation to determine if a portion of the unrealized loss is a result of an expected credit loss. The Corporation will then recognize either credit loss expense or a reversal of credit loss expense in other income for the amount necessary to adjust the debt securities valuation allowance to its current estimate of excepted credit losses. Cash flows expected to be collected are estimated using all relevant information available such as remaining payment terms, prepayment speeds, the financial condition of the issuer, expected defaults and the value of the underlying collateral. If any of the decline in fair value is related to market factors, that amount is recognized in accumulated OCI. In certain instances, the credit loss may exceed the total decline in fair value, in which case, the allowance recorded is limited to the difference between the amortized cost and the fair value of the asset.

The Corporation separately evaluates its HTM debt securities for any credit losses, of which substantially all qualify for the zero loss assumption. For the remaining securities, the Corporation performs a discounted cash flow analysis to estimate any credit losses which are then recognized as part of the allowance for credit losses.

Interest on debt securities, including amortization of premiums and accretion of discounts, is included in interest income. Premiums and discounts are amortized or accreted to interest income at a constant effective yield over the contractual lives of the securities. Realized gains and losses from the sales of debt securities are determined using the specific identification method.

Equity securities with readily determinable fair values that are not held for trading purposes are carried at fair value with unrealized gains and losses included in other income. Equity securities that do not have readily determinable fair values are recorded at cost less impairment, if any, plus or minus qualifying observable price changes. These securities are reported in other assets.

Loans and Leases

Loans, with the exception of loans accounted for under the fair value option, are measured at historical cost and reported at their outstanding principal balances net of any unearned income, charge-offs, unamortized deferred fees and costs on originated loans, and for purchased loans, net of any unamortized premiums or discounts. Loan origination fees and certain direct origination costs are deferred and recognized as adjustments to interest income over the lives of the related loans. Unearned income, discounts and premiums are amortized to interest income using a level yield methodology. The Corporation elects to account for certain consumer and commercial loans under the fair value option with interest reported in interest income and changes in fair value reported in market making and similar activities or other income.

Under applicable accounting guidance, for reporting purposes, the loan and lease portfolio is categorized by portfolio segment and, within each portfolio segment, by class of financing receivables. A portfolio segment is defined as the level at which an entity develops and documents a systematic methodology to determine the allowance for credit losses, and a class of financing receivables is defined as the level of disaggregation of portfolio segments based on the initial measurement attribute, risk characteristics and methods for assessing risk. The Corporation’s three portfolio segments are Consumer Real Estate, Credit Card and Other Consumer, and Commercial. The classes within the Consumer Real Estate portfolio segment are residential mortgage and home equity. The classes within the Credit Card and Other Consumer portfolio segment are credit card, direct/indirect consumer and other consumer. The classes within the Commercial portfolio segment are U.S. commercial, non-U.S. commercial, commercial real estate, commercial lease financing and U.S. small business commercial.

Leases

The Corporation provides equipment financing to its customers through a variety of lessor arrangements. Direct financing leases and sales-type leases are carried at the aggregate of lease payments receivable plus the estimated residual value of the leased property less unearned income, which is accreted to interest income over the lease terms using methods that approximate the interest method. Operating lease income is recognized on a straight-line basis. The Corporation's lease arrangements generally do not contain non-lease components.

Allowance for Credit Losses

The allowance for credit losses includes both the allowance for loan and lease losses and the reserve for unfunded lending commitments and represents management’s estimate of the ECL in the Corporation’s loan and lease portfolio, excluding loans and unfunded lending commitments accounted for under the fair value option. The ECL on funded consumer and commercial loans and leases is referred to as the allowance for loan and lease losses and is reported separately as a contra-asset to loans and leases on the Consolidated Balance Sheet. The ECL for unfunded lending commitments, including home equity lines of credit (HELOCs), standby letters of credit (SBLCs) and binding unfunded loan commitments is reported on the Consolidated Balance Sheet in accrued expenses and other liabilities. The provision for credit losses related to the loan and lease portfolio and unfunded lending commitments is reported in the Consolidated Statement of Income at the amount necessary to adjust the allowance for credit losses to the current estimate of ECL.

For loans and leases, the ECL is typically estimated using quantitative methods that consider a variety of factors such as historical loss experience, the current credit quality of the portfolio as well as an economic outlook over the life of the loan. The life of the loan for closed-ended products is based on the contractual maturity of the loan adjusted for any expected prepayments. The contractual maturity includes any extension options that are at the sole discretion of the borrower. For open-ended products (e.g., lines of credit), the ECL is determined based on the maximum repayment term associated with future draws from credit lines unless those lines of credit are unconditionally cancellable (e.g., credit cards) in which case the Corporation does not record any allowance.

In its loss forecasting framework, the Corporation incorporates forward-looking information through the use of macroeconomic scenarios applied over the forecasted life of the assets. These macroeconomic scenarios include variables that have historically been key drivers of increases and decreases in credit losses. These variables include, but are not limited to, unemployment rates, real estate prices, gross domestic product levels and corporate bond spreads. As any one economic outlook is inherently uncertain, the Corporation leverages

multiple scenarios. The scenarios that are chosen each quarter and the weighting given to each scenario depend on a variety of factors including recent economic events, leading economic indicators, views of internal and third-party economists and industry trends.

The estimate of credit losses includes expected recoveries of amounts previously charged off (i.e., negative allowance). If a loan has been charged off, the expected cash flows on the loan are not limited by the current amortized cost balance. Instead, expected cash flows can be assumed up to the unpaid principal balance immediately prior to the charge-off.

The allowance for loan and lease losses for troubled debt restructurings (TDR) is measured based on the present value of projected future lifetime principal and interest cash flows discounted at the loan's original effective interest rate, or in cases where foreclosure is probable or the loan is collateral dependent, at the loan's collateral value or its observable market price, if available. The measurement of ECL for the renegotiated consumer credit card TDR portfolio is based on the present value of projected cash flows discounted using the average TDR portfolio contractual interest rate, excluding promotionally priced loans, in effect prior to restructuring. Projected cash flows for TDRs use the same economic outlook as discussed above. For purposes of computing this specific loss component of the allowance, larger impaired loans are evaluated individually and smaller impaired loans are evaluated as a pool.

Also included in the allowance for loan and lease losses are qualitative reserves to cover losses that are expected but, in the Corporation's assessment, may not be adequately reflected in the quantitative methods or the economic assumptions described above. For example, factors that the Corporation considers include changes in lending policies and procedures, business conditions, the nature and size of the portfolio, portfolio concentrations, the volume and severity of past due loans and nonaccrual loans, the effect of external factors such as competition, and legal and regulatory requirements, among others. Further, the Corporation considers the inherent uncertainty in quantitative models that are built on historical data.

With the exception of the Corporation's credit card portfolio, the Corporation does not include reserves for interest receivable in the measurement of the allowance for credit losses as the Corporation generally classifies consumer loans as nonperforming at 90 days past due and reverses interest income for these loans at that time. For credit card loans, the Corporation reserves for interest and fees as part of the allowance for loan and lease losses. Upon charge-off of a credit card loan, the Corporation reverses the interest and fee income against the income statement line item where it was originally recorded.

The Corporation has identified the following three portfolio segments and measures the allowance for credit losses using the following methods.

Consumer Real Estate

To estimate ECL for consumer loans secured by residential real estate, the Corporation estimates the number of loans that will default over the life of the existing portfolio, after factoring in estimated prepayments, using quantitative modeling methodologies. The attributes that are most significant in estimating the Corporation's ECL include refreshed loan-to-value (LTV) or, in the case of a subordinated lien, refreshed combined LTV (CLTV), borrower credit score, months since origination and geography, all of which are further broken down by present collection status (whether the loan is current, delinquent, in default, or in bankruptcy). The estimates are based on the Corporation's historical experience with the loan portfolio, adjusted to reflect the economic outlook. The outlook on the unemployment rate and consumer real estate prices are key factors that impact the frequency and severity of loss estimates. The Corporation does not reserve for credit losses on the unpaid principal balance of loans insured by the Federal Housing Administration (FHA) and long-term standby loans, as these loans are fully insured. The Corporation records a reserve for unfunded lending commitments for the ECL associated with the undrawn portion of the Corporation's HELOCs, which can only be canceled by the Corporation if certain criteria are met. The ECL associated with these unfunded lending commitments is calculated using the same models and methodologies noted above and incorporate utilization assumptions at time of default.

For loans that are more than 180 days past due and collateral-dependent TDRs, the Corporation bases the allowance on the estimated fair value of the underlying collateral as of the reporting date less costs to sell. The fair value of the collateral securing these loans is generally determined using an automated valuation model (AVM) that estimates the value of a property by reference to market data including sales of comparable properties and price trends specific to the Metropolitan Statistical Area in which the property being valued is located. In the event that an AVM value is not available, the Corporation utilizes publicized indices or if these methods provide less reliable valuations, the Corporation uses appraisals or broker price opinions to estimate the fair value of the collateral. While there is inherent imprecision in these valuations, the Corporation believes that they are representative of this portfolio in the aggregate.

For loans that are more than 180 days past due and collateral-dependent TDRs, with the exception of the Corporation's fully insured portfolio, the outstanding balance of loans that is in excess of the estimated property value after adjusting for costs to sell is charged off. If the estimated property value decreases in periods subsequent to the initial charge-off, the Corporation will record an additional charge-off; however, if the value increases in periods subsequent to the charge-off, the Corporation will adjust the allowance to account for the increase but not to a level above the cumulative charge-off amount.

Credit Cards and Other Consumer

Credit cards are revolving lines of credit without a defined maturity date. The estimated life of a credit card receivable is determined by estimating the amount and timing of expected future payments (e.g., borrowers making full payments, minimum payments or somewhere in between) that it will take for a receivable balance to pay off. The ECL on the future payments incorporates the spending behavior of a borrower through time using key borrower-specific factors and the economic outlook described above. The Corporation applies all expected payments in accordance with the Credit Card Accountability Responsibility and Disclosure Act of 2009 (i.e., paying down the highest interest rate bucket first). Then forecasted future payments are prioritized to pay off the oldest balance until it is brought to zero or an expected charge-off amount. Unemployment rate outlook, borrower credit score, delinquency status and historical payment behavior are all key inputs into the credit card receivable loss forecasting model.

Future draws on the credit card lines are excluded from the ECL as they are unconditionally cancellable.

The ECL for the consumer vehicle lending portfolio is also determined using quantitative methods supplemented with qualitative analysis. The quantitative model estimates ECL giving consideration to key borrower and loan characteristics such as delinquency status, borrower credit score, LTV ratio, underlying collateral type and collateral value.

Commercial

The ECL on commercial loans is forecasted using models that estimate credit losses over the loan's contractual life at an individual loan level. The models use the contractual terms to forecast future principal cash flows while also considering expected prepayments. For open-ended commitments such as revolving lines of credit, changes in funded balance are captured by forecasting a borrower's draw and payment behavior over the remaining life of the commitment. For loans collateralized with commercial real estate and for which the underlying asset is the primary source of repayment, the loss forecasting models consider key loan and customer attributes such as LTV ratio, net operating income and debt service coverage, and captures variations in behavior according to property type and region. The outlook on the unemployment rate, gross domestic product, and forecasted real estate prices are utilized to determine indicators such as rent levels and vacancy rates, which impact the ECL estimate. For all other commercial loans and leases, the loss forecasting model determines the probabilities of transition to different credit risk ratings or default at each point over the life of the asset based on the borrower's current credit risk rating, industry sector, size of the exposure and the geographic market. The severity of loss is determined based on the type of collateral securing the exposure, the size of the exposure, the borrower's industry sector, any guarantors and the geographic market. Assumptions of expected loss are conditioned to the economic outlook, and the model considers key economic variables such as unemployment rate, gross domestic product, corporate bond spreads, real estate and other asset prices and equity market returns.

In addition to the allowance for loan and lease losses, the Corporation also estimates ECL related to unfunded lending commitments such as letters of credit, financial guarantees, unfunded bankers acceptances and binding loan commitments, excluding commitments accounted for under the fair value option. Reserves are estimated for the unfunded exposure using the same models and methodologies as the funded exposure and are reported as reserves for unfunded lending commitments.

Nonperforming Loans and Leases, Charge-offs and Delinquencies

Nonperforming loans and leases generally include loans and leases that have been placed on nonaccrual status. Loans accounted for under the fair value option and LHFS are not reported as nonperforming. When a nonaccrual loan is deemed uncollectible, it is charged off against the allowance for credit losses. If the charged-off amount is later recovered, the amount is reversed through the allowance for credit losses at the recovery date. Charge-offs are reported net of recoveries (net charge-offs). If recoveries for the period are greater than charge-offs, net charge-offs are reported as a negative amount.

In accordance with the Corporation's policies, consumer real estate-secured loans, including residential mortgages and home equity loans, are generally placed on nonaccrual status and classified as nonperforming at 90 days past due unless repayment of the loan is insured by the FHA or through individually insured long-term standby agreements with Fannie Mae (FNMA) or Freddie Mac (FHLMC) (the fully-insured portfolio). Residential mortgage loans in the fully-insured portfolio are not placed on nonaccrual status and, therefore, are not reported as nonperforming. Junior-lien home equity loans are placed on nonaccrual status and classified as nonperforming when the underlying first-lien mortgage loan becomes 90 days past due even if the junior-lien loan is current. The outstanding balance of real estate-secured loans that is in excess of the estimated property value less costs to sell is charged off no later than the end of the month in which the loan becomes 180 days past due unless the loan is fully insured, or for loans in bankruptcy, within 60 days of receipt of notification of filing, with the remaining balance classified as nonperforming.

Consumer loans secured by personal property, credit card loans and other unsecured consumer loans are not placed on nonaccrual status prior to charge-off and, therefore, are not reported as nonperforming loans, except for certain secured consumer loans, including those that have been modified in a TDR. Personal property-secured loans (including auto loans) are charged off to collateral value no later than the end of the month in which the account becomes 120 days past due, or upon repossession of an auto or, for loans in bankruptcy, within 60 days of receipt of notification of filing. Credit card and other unsecured customer loans are charged off no later than the end of the month in which the account becomes 180 days past due, within 60 days after receipt of notification of death or bankruptcy, or upon confirmation of fraud.

Commercial loans and leases, excluding business card loans, that are past due 90 days or more as to principal or interest, or where reasonable doubt exists as to timely collection, including loans that are individually identified as being impaired, are generally placed on nonaccrual status and classified as nonperforming unless well-secured and in the process of collection.

Business card loans are charged off in the same manner as consumer credit card loans. Other commercial loans and leases are generally charged off when all or a portion of the principal amount is determined to be uncollectible.

The entire balance of a consumer loan or commercial loan or lease is contractually delinquent if the minimum payment is not received by the specified due date on the customer's billing statement. Interest and fees continue to accrue on past due loans and leases until the date the loan is placed on nonaccrual status, if applicable. Accrued interest receivable is reversed when loans and leases are placed on nonaccrual status. Interest collections on nonaccruing loans and leases for which the ultimate collectability of principal is uncertain are applied as principal reductions; otherwise, such collections are credited to income when received. Loans and leases may be restored to accrual status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected.

Troubled Debt Restructurings

Consumer and commercial loans and leases whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties are classified as TDRs. Concessions could include a reduction in the interest rate to a rate that is below market on the loan, payment extensions, forgiveness of principal, forbearance or other actions designed to maximize collections. Loans that are carried at fair value and LHFS are not classified as TDRs.

Loans and leases whose contractual terms have been modified in a TDR and are current at the time of restructuring may remain on accrual status if there is demonstrated performance prior to the restructuring and payment in full under the restructured terms is expected. Otherwise, the loans are placed on nonaccrual status and reported as nonperforming, except for fully-insured consumer real estate loans, until there is sustained repayment performance for a reasonable period, generally six months. If accruing TDRs cease to perform in accordance with their modified contractual terms, they are placed on nonaccrual status and reported as nonperforming TDRs.

Secured consumer loans that have been discharged in Chapter 7 bankruptcy and have not been reaffirmed by the borrower are classified as TDRs at the time of discharge. Such loans are placed on nonaccrual status and written down to the estimated collateral value less costs to sell no later than at the time of discharge. If these loans are contractually current, interest collections are generally recorded in interest income on a cash basis. Consumer real estate-secured loans for which a binding offer to restructure has been extended are also classified as TDRs. Credit card and other unsecured consumer loans that have been renegotiated in a TDR generally remain on accrual status until the loan is either paid in full or charged off, which occurs no later than the end of the month in which the loan becomes 180 days past due or, for loans that have been placed on a fixed payment plan, 120 days past due.

A loan that had previously been modified in a TDR and is subsequently refinanced under current underwriting standards at a market rate with no concessionary terms is accounted for as a new loan and is no longer reported as a TDR.

COVID-19 Programs

The Corporation has implemented various consumer and commercial loan modification programs to provide its borrowers relief from the economic impacts of the Coronavirus Disease 2019 (COVID-19) pandemic (the pandemic). In accordance with the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), the Corporation has elected to not apply TDR classification to eligible COVID-19 related loan modifications that were performed after March 1, 2020 to loans that were current as of December 31, 2019. Accordingly, these restructurings are not classified as TDRs. The availability of this election expired on January 1, 2022. In addition, for loans modified in response to the pandemic that do not meet the above criteria (e.g., current payment status at December 31, 2019), the Corporation is applying the guidance included in an interagency statement issued by the bank regulatory agencies. This guidance states that loan modifications performed in light of the pandemic, including loan payment deferrals that are up to six months in duration, that were granted to borrowers who were current as of the implementation date of a loan modification program or modifications granted under government mandated modification programs, are not TDRs. For loan modifications that include a payment deferral and are not TDRs, the borrowers' past due and nonaccrual status have not been impacted during the deferral period. The Corporation has continued to accrue interest during the deferral period using a constant effective yield method. For most mortgage, HELOC and commercial loan modifications, the contractual interest that accrued during the deferral period is payable at the maturity of the loan. The Corporation includes these amounts with the unpaid principal balance when computing its allowance for credit losses. Amounts that are subsequently deemed uncollectible are written off against the allowance for credit losses.

Loans Held-for-sale

Loans that the Corporation intends to sell in the foreseeable future, including residential mortgages, loan syndications, and to a lesser degree, commercial real estate, consumer finance and other loans, are reported as LHFS and are carried at the lower of aggregate cost or fair value. The Corporation accounts for certain LHFS, including residential mortgage LHFS, under the fair value option. Loan origination costs for LHFS carried at the lower of cost or fair value are capitalized as part of the carrying value of the loans and, upon the sale of a loan, are recognized as part of the gain or loss in noninterest income. LHFS that are on nonaccrual status and are reported as nonperforming, as defined in the policy herein, are reported separately from nonperforming loans and leases.

Premises and Equipment

Premises and equipment are carried at cost less accumulated depreciation and amortization. Depreciation and amortization are recognized using the straight-line method over the estimated useful lives of the assets. Estimated lives range up to 40 years for buildings, up to 12 years for furniture and equipment, and the shorter of lease term or estimated useful life for leasehold improvements.

Other Assets

For the Corporation's financial assets that are measured at amortized cost and are not included in debt securities or loans and leases on the Consolidated Balance Sheet, the Corporation evaluates these assets for ECL using various techniques. For assets that are subject to collateral maintenance provisions, including federal funds sold and securities borrowed or purchased under agreements to resell, where the collateral consists of daily margining of liquid and marketable assets where the margining is expected to be maintained into the foreseeable future, the expected losses are assumed to be zero. For all other assets, the Corporation performs qualitative analyses, including consideration of historical losses and current economic conditions, to estimate any ECL which are then included in a valuation account that is recorded as a contra-asset against the amortized cost basis of the financial asset.

Lessee Arrangements

Substantially all of the Corporation's lessee arrangements are operating leases. Under these arrangements, the Corporation records right-of-use assets and lease liabilities at lease commencement. Right-of-use assets are reported in other assets on the Consolidated Balance Sheet, and the related lease liabilities are reported in accrued expenses and other liabilities. All leases are recorded on the Consolidated Balance Sheet except leases with an initial term less than 12 months for which the Corporation made the short-term lease election. Lease expense is recognized on a straight-line basis over the lease term and is recorded in occupancy and equipment expense in the Consolidated Statement of Income.

The Corporation made an accounting policy election not to separate lease and non-lease components of a contract that is or contains a lease for its real estate and equipment leases. As such, lease payments represent payments on both lease and non-lease components. At lease commencement, lease liabilities are recognized based on the present value of the remaining lease payments and discounted using the Corporation's incremental borrowing rate. Right-of-use assets initially equal the lease liability, adjusted for any lease payments

made prior to lease commencement and for any lease incentives.

Goodwill and Intangible Assets

Goodwill is the purchase premium after adjusting for the fair value of net assets acquired. Goodwill is not amortized but is reviewed for potential impairment on an annual basis, or when events or circumstances indicate a potential impairment, at the reporting unit level. A reporting unit is a business segment or one level below a business segment.

The Corporation assesses the fair value of each reporting unit against its carrying value, including goodwill, as measured by allocated equity. For purposes of goodwill impairment testing, the Corporation utilizes allocated equity as a proxy for the carrying value of its reporting units. Allocated equity in the reporting units is comprised of allocated capital plus capital for the portion of goodwill and intangibles specifically assigned to the reporting unit.

In performing its goodwill impairment testing, the Corporation first assesses qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. Qualitative factors include, among other things, macroeconomic conditions, industry and market considerations, financial performance of the respective reporting unit and other relevant entity- and reporting-unit specific considerations.

If the Corporation concludes it is more likely than not that the fair value of a reporting unit is less than its carrying value, a quantitative assessment is performed. The Corporation has an unconditional option to bypass the qualitative assessment for any reporting unit in any period and proceed directly to performing the quantitative goodwill impairment test. The Corporation may resume performing the qualitative assessment in any subsequent period.

When performing the quantitative assessment, if the fair value of the reporting unit exceeds its carrying value, goodwill of the reporting unit would not be considered impaired. If the carrying value of the reporting unit exceeds its fair value, a goodwill impairment loss would be recognized for the amount by which the reporting unit's allocated equity exceeds its fair value. An impairment loss recognized cannot exceed the amount of goodwill assigned to a reporting unit. An impairment loss establishes a new basis in the goodwill, and subsequent reversals of goodwill impairment losses are not permitted under applicable accounting guidance.

For intangible assets subject to amortization, an impairment loss is recognized if the carrying value of the intangible asset is not recoverable and exceeds fair value. The carrying value of the intangible asset is considered not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use of the asset. Intangible assets deemed to have indefinite useful lives are not subject to amortization. An impairment loss is recognized if the carrying value of the intangible asset with an indefinite life exceeds its fair value.

Variable Interest Entities

A VIE is an entity that lacks equity investors or whose equity investors do not have a controlling financial interest in the entity through their equity investments. The Corporation consolidates a VIE if it has both the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and an obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. On a quarterly basis, the Corporation reassesses its involvement with the VIE and evaluates the impact of changes in governing documents and its financial interests in the VIE. The consolidation status of the VIEs with which the Corporation is involved may change as a result of such reassessments.

The Corporation primarily uses VIEs for its securitization activities, in which the Corporation transfers whole loans or debt securities into a trust or other vehicle. When the Corporation is the servicer of whole loans held in a securitization trust, including non-agency residential mortgages, home equity loans, credit cards, and other loans, the Corporation has the power to direct the most significant activities of the trust. The Corporation generally does not have the power to direct the most significant activities of a residential mortgage agency trust except in certain circumstances in which the Corporation holds substantially all of the issued securities and has the unilateral right to liquidate the trust. The power to direct the most significant activities of a commercial mortgage securitization trust is typically held by the special servicer or by the party holding specific subordinate securities which embody certain controlling rights. The Corporation consolidates a whole-loan securitization trust if it has the power to direct the most significant activities and also holds securities issued by the trust or has other contractual arrangements, other than standard representations and warranties, that could potentially be significant to the trust.

The Corporation may also transfer trading account securities and AFS securities into municipal bond or resecuritization trusts. The Corporation consolidates a municipal bond or resecuritization trust if it has control over the ongoing activities of the trust such as the remarketing of the trust's liabilities or, if there are no ongoing activities, sole discretion over the design of the trust, including the identification of securities to be transferred in and the structure of securities to be issued, and also retains securities or has liquidity or other commitments that could potentially be significant to the trust. The Corporation does not consolidate a municipal bond or resecuritization trust if one or a limited number of third-party investors share responsibility for the design of the trust or have control over the significant activities of the trust through liquidation or other substantive rights.

Other VIEs used by the Corporation include collateralized debt obligations (CDOs), investment vehicles created on behalf of customers and other investment vehicles. The Corporation does not routinely serve as collateral manager for CDOs and, therefore, does not typically have the power to direct the activities that most significantly impact the economic performance of a CDO. However, following an event of default, if the Corporation is a majority holder of senior securities issued by a CDO and acquires the power to manage its assets, the Corporation consolidates the CDO.

The Corporation consolidates a customer or other investment vehicle if it has control over the initial design of the vehicle or manages the assets in the vehicle and also absorbs potentially significant gains or losses through an investment in the vehicle, derivative contracts or other arrangements. The Corporation does not consolidate an investment vehicle if a single investor controlled the initial design of the vehicle or manages the assets in the vehicles or if the Corporation does not have a variable interest that could potentially be significant to the vehicle.

Retained interests in securitized assets are initially recorded at fair value. In addition, the Corporation may invest in debt securities issued by unconsolidated VIEs. Fair values of these debt securities, which are classified as trading account assets, debt securities carried at fair value or HTM securities, are based primarily on quoted market prices in active or inactive markets. Generally, quoted market prices for retained residual interests

are not available; therefore, the Corporation estimates fair values based on the present value of the associated expected future cash flows.

Fair Value

The Corporation measures the fair values of its assets and liabilities, where applicable, in accordance with accounting guidance that requires an entity to base fair value on exit price. Under this guidance, an entity is required to maximize the use of observable inputs and minimize the use of unobservable inputs in measuring fair value. Under applicable accounting standards, fair value measurements are categorized into one of three levels based on the inputs to the valuation technique with the highest priority given to unadjusted quoted prices in active markets and the lowest priority given to unobservable inputs. The Corporation categorizes its fair value measurements of financial instruments based on this three-level hierarchy.

Level 1 Unadjusted quoted prices in active markets for identical assets or liabilities. Level 1 assets and liabilities include debt and equity securities and derivative contracts that are traded in an active exchange market, as well as certain U.S. Treasury securities that are highly liquid and are actively traded in OTC markets.

Level 2 Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 2 assets and liabilities include debt securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts where fair value is determined using a pricing model with inputs that are observable in the market or can be derived principally from or corroborated by observable market data. This category generally includes U.S. government and agency mortgage-backed (MBS) and asset-backed securities (ABS), corporate debt securities, derivative contracts, certain loans and LHFS.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the overall fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments for which the determination of fair value requires significant management judgment or estimation. The fair value for such assets and liabilities is generally determined using pricing models, discounted cash flow methodologies or similar techniques that incorporate the assumptions a market participant would use in pricing the asset or liability. This category generally includes retained residual interests in securitizations, consumer MSRs, certain ABS, highly structured, complex or long-dated derivative contracts, certain loans and LHFS, IRLCs and certain CDOs where independent pricing information cannot be obtained for a significant portion of the underlying assets.

Income Taxes

There are two components of income tax expense: current and deferred. Current income tax expense reflects taxes to be paid or refunded for the current period. Deferred income tax expense results from changes in deferred tax assets and liabilities between periods. These gross deferred tax assets and liabilities represent decreases or increases in taxes expected to be paid in the future because of future reversals of temporary differences in the bases of assets and liabilities as measured by tax laws and their bases as reported in the financial statements. Deferred tax assets are also recognized for tax attributes such as net operating loss carryforwards and tax credit carryforwards. Valuation allowances are recorded to reduce deferred tax assets to the amounts management concludes are more likely than not to be realized.

Income tax benefits are recognized and measured based upon a two-step model: first, a tax position must be more likely than not to be sustained based solely on its technical merits in order to be recognized, and second, the benefit is measured as the largest dollar amount of that position that is more likely than not to be sustained upon settlement. The difference between the benefit recognized and the tax benefit claimed on a tax return is referred to as an unrecognized tax benefit. The Corporation records income tax-related interest and penalties, if applicable, within income tax expense.

Revenue Recognition

The following summarizes the Corporation’s revenue recognition accounting policies for certain noninterest income activities.

Card Income

Card income includes annual, late and over-limit fees as well as interchange, cash advances and other miscellaneous items from credit and debit card transactions and from processing card transactions for merchants. Card income is presented net of direct costs. Interchange fees are recognized upon settlement of the credit and debit card payment transactions and are generally determined on a percentage basis for credit cards and fixed rates for debit cards based on the corresponding payment network’s rates. Substantially all card fees are recognized at the transaction date, except for certain time-based fees such as annual fees, which are recognized over 12 months. Fees charged to cardholders and merchants that are estimated to be uncollectible are reserved in the allowance for loan and lease losses. Included in direct cost are rewards and credit card partner payments. Rewards paid to cardholders are related to points earned by the cardholder that can be redeemed for a broad range of rewards including cash, travel and gift cards. The points to be redeemed are estimated based on past redemption behavior, card product type, account transaction activity and other historical card performance. The liability is reduced as the points are redeemed. The Corporation also makes payments to credit card partners. The payments are based on revenue-sharing agreements that are generally driven by cardholder transactions and partner sales volumes. As part of the revenue-sharing agreements, the credit card partner provides the Corporation exclusive rights to market to the credit card partner’s members or customers on behalf of the Corporation.

Service Charges

Service charges include deposit and lending-related fees. Deposit-related fees consist of fees earned on consumer and commercial deposit activities and are generally recognized when the transactions occur or as the service is performed. Consumer fees are earned on consumer deposit accounts for account maintenance and various transaction-based services, such as ATM transactions, wire transfer activities, check and money order processing and insufficient funds/overdraft transactions. Commercial deposit-related fees are from the Corporation’s Global Transaction Services business and consist of commercial deposit and treasury management services, including account maintenance and other services, such as payroll, sweep

account and other cash management services. Lending-related fees generally represent transactional fees earned from certain loan commitments, financial guarantees and SBLCs.

Investment and Brokerage Services

Investment and brokerage services consist of asset management and brokerage fees. Asset management fees are earned from the management of client assets under advisory agreements or the full discretion of the Corporation's financial advisors (collectively referred to as assets under management (AUM)). Asset management fees are earned as a percentage of the client's AUM and generally range from 50 basis points (bps) to 150 bps of the AUM. In cases where a third party is used to obtain a client's investment allocation, the fee remitted to the third party is recorded net and is not reflected in the transaction price, as the Corporation is an agent for those services.

Brokerage fees include income earned from transaction-based services that are performed as part of investment management services and are based on a fixed price per unit or as a percentage of the total transaction amount. Brokerage fees also include distribution fees and sales commissions that are primarily in the *Global Wealth & Investment Management* (*GWIM*) segment and are earned over time. In addition, primarily in the *Global Markets* segment, brokerage fees are earned when the Corporation fills customer orders to buy or sell various financial products or when it acknowledges, affirms, settles and clears transactions and/or submits trade information to the appropriate clearing broker. Certain customers pay brokerage, clearing and/or exchange fees imposed by relevant regulatory bodies or exchanges in order to execute or clear trades. These fees are recorded net and are not reflected in the transaction price, as the Corporation is an agent for those services.

Investment Banking Income

Investment banking income includes underwriting income and financial advisory services income. Underwriting consists of fees earned for the placement of a customer's debt or equity securities. The revenue is generally earned based on a percentage of the fixed number of shares or principal placed. Once the number of shares or notes is determined and the service is completed, the underwriting fees are recognized. The Corporation incurs certain out-of-pocket expenses, such as legal costs, in performing these services. These expenses are recovered through the revenue the Corporation earns from the customer and are included in operating expenses. Syndication fees represent fees earned as the agent or lead lender responsible for structuring, arranging and administering a loan syndication.

Financial advisory services consist of fees earned for assisting clients with transactions related to mergers and acquisitions and financial restructurings. Revenue varies depending on the size of the transaction and scope of services performed and is generally contingent on successful completion of the transaction. Revenue is typically recognized once the transaction is completed and all services have been rendered. Additionally, the Corporation may earn a fixed fee in merger and acquisition transactions to provide a fairness opinion, with the fees recognized when the opinion is delivered to the client.

Other Revenue Measurement and Recognition Policies

The Corporation did not disclose the value of any open performance obligations at December 31, 2021, as its contracts with customers generally have a fixed term that is less than one year, an open term with a cancellation period that is less than one year, or provisions that allow the Corporation to recognize revenue at the amount it has the right to invoice.

Earnings Per Common Share

Earnings per common share (EPS) is computed by dividing net income allocated to common shareholders by the weighted-average common shares outstanding, excluding unvested common shares subject to repurchase or cancellation. Net income allocated to common shareholders is net income adjusted for preferred stock dividends including dividends declared, accretion of discounts on preferred stock including accelerated accretion when preferred stock is repaid early, and cumulative dividends related to the current dividend period that have not been declared as of period end, less income allocated to participating securities. Diluted EPS is computed by dividing income allocated to common shareholders plus dividends on dilutive convertible preferred stock and preferred stock that can be tendered to exercise warrants, by the weighted-average common shares outstanding plus amounts representing the dilutive effect of stock options outstanding, restricted stock, restricted stock units (RSUs), outstanding warrants and the dilution resulting from the conversion of convertible preferred stock, if applicable.

Foreign Currency Translation

Assets, liabilities and operations of foreign branches and subsidiaries are recorded based on the functional currency of each entity. When the functional currency of a foreign operation is the local currency, the assets, liabilities and operations are translated, for consolidation purposes, from the local currency to the U.S. dollar reporting currency at period-end rates for assets and liabilities and generally at average rates for results of operations. The resulting unrealized gains and losses are reported as a component of accumulated OCI, net-of-tax. When the foreign entity's functional currency is the U.S. dollar, the resulting remeasurement gains or losses on foreign currency-denominated assets or liabilities are included in earnings.

Paycheck Protection Program

The Corporation is participating in the Paycheck Protection Program (PPP), which is a loan program that originated from the CARES Act and was subsequently expanded by the Paycheck Protection Program and Health Care Enhancement Act. The PPP is designed to provide U.S. small businesses with cash-flow assistance through loans fully guaranteed by the Small Business Administration (SBA). If the borrower meets certain criteria and uses the proceeds towards certain eligible expenses, the borrower's obligation to repay the loan can be forgiven up to the full principal amount of the loan and any accrued interest. Upon borrower forgiveness, the SBA pays the Corporation for the principal and accrued interest owed on the loan. If the full principal of the loan is not forgiven, the loan will operate according to the original loan terms with the 100 percent SBA guaranty remaining. At December 31, 2021 and 2020, the Corporation had approximately 67,000 and 332,000 PPP loans with a carrying value of $4.7 billion and $22.7 billion. As compensation for originating the loans, the Corporation received lender processing fees from the SBA, which were capitalized, along with the loan origination costs, and are being amortized over the loans' contractual lives and recognized as interest income. Upon forgiveness of a loan and repayment by the SBA, any unrecognized net capitalized fees and costs related to the loan are recognized as interest income in that period.

NOTE 2 Net Interest Income and Noninterest Income

The table below presents the Corporation's net interest income and noninterest income disaggregated by revenue source for 2021, 2020 and 2019. For more information, see *Note 1 – Summary of Significant Accounting Principles.* For a disaggregation of noninterest income by business segment and *All Other*, see *Note 23 – Business Segment Information*.

(Dollars in millions)	2021	2020	2019
Net interest income			
Interest income			
Loans and leases	**$ 29,282**	$ 34,029	$ 43,086
Debt securities	**12,376**	9,790	11,806
Federal funds sold and securities borrowed or purchased under agreements to resell [1]	**(90)**	903	4,843
Trading account assets	**3,770**	4,128	5,196
Other interest income	**2,334**	2,735	6,305
Total interest income	**47,672**	51,585	71,236
Interest expense			
Deposits	**537**	1,943	7,188
Short-term borrowings [1]	**(358)**	987	7,208
Trading account liabilities	**1,128**	974	1,249
Long-term debt	**3,431**	4,321	6,700
Total interest expense	**4,738**	8,225	22,345
Net interest income	**$ 42,934**	$ 43,360	$ 48,891
Noninterest income			
Fees and commissions			
Card income			
Interchange fees [2]	**$ 4,560**	$ 3,954	$ 3,834
Other card income	**1,658**	1,702	1,963
Total card income	**6,218**	5,656	5,797
Service charges			
Deposit-related fees	**6,271**	5,991	6,588
Lending-related fees	**1,233**	1,150	1,086
Total service charges	**7,504**	7,141	7,674
Investment and brokerage services			
Asset management fees	**12,729**	10,708	10,241
Brokerage fees	**3,961**	3,866	3,661
Total investment and brokerage services	**16,690**	14,574	13,902
Investment banking fees			
Underwriting income	**5,077**	4,698	2,998
Syndication fees	**1,499**	861	1,184
Financial advisory services	**2,311**	1,621	1,460
Total investment banking fees	**8,887**	7,180	5,642
Total fees and commissions	**39,299**	34,551	33,015
Market making and similar activities	**8,691**	8,355	9,034
Other income (loss)	**(1,811)**	(738)	304
Total noninterest income	**$ 46,179**	$ 42,168	$ 42,353

(1) For more information on negative interest, see *Note 1 – Summary of Significant Accounting Principles.*

(2) Gross interchange fees and merchant income were $11.5 billion, $9.2 billion and $10.0 billion for 2021, 2020 and 2019, respectively, and are presented net of $6.9 billion, $5.5 billion and $6.2 billion of expenses for rewards and partner payments as well as certain other card costs for the same periods.

NOTE 3 Derivatives

Derivative Balances

Derivatives are entered into on behalf of customers, for trading or to support risk management activities. Derivatives used in risk management activities include derivatives that may or may not be designated in qualifying hedge accounting relationships. Derivatives that are not designated in qualifying hedge accounting relationships are referred to as other risk management derivatives. For more information on the Corporation's derivatives and hedging activities, see *Note 1 – Summary of Significant Accounting Principles.* The following tables present derivative instruments included on the Consolidated Balance Sheet in derivative assets and liabilities at December 31, 2021 and 2020. Balances are presented on a gross basis, prior to the application of counterparty and cash collateral netting. Total derivative assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements and have been reduced by cash collateral received or paid.

		December 31, 2021					
		Gross Derivative Assets			Gross Derivative Liabilities		
(Dollars in billions)	Contract/ Notional [1]	Trading and Other Risk Management Derivatives	Qualifying Accounting Hedges	Total	Trading and Other Risk Management Derivatives	Qualifying Accounting Hedges	Total
Interest rate contracts							
Swaps	$ 18,068.1	$ 150.5	$ 8.9	$ 159.4	$ 156.4	$ 4.4	$ 160.8
Futures and forwards	2,243.2	1.1	—	1.1	1.0	—	1.0
Written options	1,616.1	—	—	—	28.8	—	28.8
Purchased options	1,673.6	33.1	—	33.1	—	—	—
Foreign exchange contracts							
Swaps	1,420.9	28.6	0.2	28.8	30.5	0.2	30.7
Spot, futures and forwards	4,087.2	37.1	0.3	37.4	37.7	0.2	37.9
Written options	287.2	—	—	—	4.1	—	4.1
Purchased options	267.6	4.1	—	4.1	—	—	—
Equity contracts							
Swaps	443.8	12.3	—	12.3	14.5	—	14.5
Futures and forwards	113.3	0.5	—	0.5	1.7	—	1.7
Written options	737.7	—	—	—	58.5	—	58.5
Purchased options	657.0	55.9	—	55.9	—	—	—
Commodity contracts							
Swaps	47.7	3.1	—	3.1	6.0	—	6.0
Futures and forwards	101.5	2.3	—	2.3	0.3	1.1	1.4
Written options	44.4	—	—	—	2.6	—	2.6
Purchased options	38.3	3.2	—	3.2	—	—	—
Credit derivatives [2]							
Purchased credit derivatives:							
Credit default swaps	297.0	1.9	—	1.9	4.3	—	4.3
Total return swaps/options	85.3	0.2	—	0.2	1.1	—	1.1
Written credit derivatives:							
Credit default swaps	279.8	4.2	—	4.2	1.6	—	1.6
Total return swaps/options	85.3	0.9	—	0.9	0.5	—	0.5
Gross derivative assets/liabilities		$ 339.0	$ 9.4	$ 348.4	$ 349.6	$ 5.9	$ 355.5
Less: Legally enforceable master netting agreements				(282.3)			(282.3)
Less: Cash collateral received/paid				(30.8)			(35.5)
Total derivative assets/liabilities				$ 35.3			$ 37.7

(1) Represents the total contract/notional amount of derivative assets and liabilities outstanding.
(2) The net derivative asset and notional amount of written credit derivatives for which the Corporation held purchased credit derivatives with identical underlying referenced names were $2.3 billion and $258.4 billion at December 31, 2021.

(Dollars in billions)	Contract/ Notional [1]	December 31, 2020 Gross Derivative Assets Trading and Other Risk Management Derivatives	Qualifying Accounting Hedges	Total	Gross Derivative Liabilities Trading and Other Risk Management Derivatives	Qualifying Accounting Hedges	Total
Interest rate contracts							
Swaps	$ 13,242.8	$ 199.9	$ 10.9	$ 210.8	$ 209.3	$ 1.3	$ 210.6
Futures and forwards	3,222.2	3.5	0.1	3.6	3.6	—	3.6
Written options	1,530.5	—	—	—	40.5	—	40.5
Purchased options	1,545.8	45.3	—	45.3	—	—	—
Foreign exchange contracts							
Swaps	1,475.8	37.1	0.3	37.4	39.7	0.6	40.3
Spot, futures and forwards	3,710.7	53.4	—	53.4	54.5	0.5	55.0
Written options	289.6	—	—	—	4.8	—	4.8
Purchased options	279.3	5.0	—	5.0	—	—	—
Equity contracts							
Swaps	320.2	13.3	—	13.3	14.5	—	14.5
Futures and forwards	106.2	0.3	—	0.3	1.4	—	1.4
Written options	599.1	—	—	—	48.8	—	48.8
Purchased options	541.2	52.6	—	52.6	—	—	—
Commodity contracts							
Swaps	36.4	1.9	—	1.9	4.4	—	4.4
Futures and forwards	63.6	2.0	—	2.0	1.0	—	1.0
Written options	24.6	—	—	—	1.4	—	1.4
Purchased options	24.7	1.5	—	1.5	—	—	—
Credit derivatives [2]							
Purchased credit derivatives:							
Credit default swaps	322.7	2.3	—	2.3	4.4	—	4.4
Total return swaps/options	63.6	0.2	—	0.2	1.0	—	1.0
Written credit derivatives:							
Credit default swaps	301.5	4.4	—	4.4	1.9	—	1.9
Total return swaps/options	68.6	0.6	—	0.6	0.4	—	0.4
Gross derivative assets/liabilities		$ 423.3	$ 11.3	$ 434.6	$ 431.6	$ 2.4	$ 434.0
Less: Legally enforceable master netting agreements				(344.9)			(344.9)
Less: Cash collateral received/paid				(42.5)			(43.6)
Total derivative assets/liabilities				$ 47.2			$ 45.5

(1) Represents the total contract/notional amount of derivative assets and liabilities outstanding.
(2) The net derivative asset and notional amount of written credit derivatives for which the Corporation held purchased credit derivatives with identical underlying referenced names were $2.2 billion and $269.8 billion at December 31, 2020.

Offsetting of Derivatives

The Corporation enters into International Swaps and Derivatives Association, Inc. (ISDA) master netting agreements or similar agreements with substantially all of the Corporation's derivative counterparties. Where legally enforceable, these master netting agreements give the Corporation, in the event of default by the counterparty, the right to liquidate securities held as collateral and to offset receivables and payables with the same counterparty. For purposes of the Consolidated Balance Sheet, the Corporation offsets derivative assets and liabilities and cash collateral held with the same counterparty where it has such a legally enforceable master netting agreement.

The following table presents derivative instruments included in derivative assets and liabilities on the Consolidated Balance Sheet at December 31, 2021 and 2020 by primary risk (e.g., interest rate risk) and the platform, where applicable, on which these derivatives are transacted. Balances are presented on a gross basis, prior to the application of counterparty and cash collateral netting. Total gross derivative assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements, which include reducing the balance for counterparty netting and cash collateral received or paid.

For more information on offsetting of securities financing agreements, see *Note 10 – Securities Financing Agreements, Short-term Borrowings and Restricted Cash*.

Offsetting of Derivatives [(1)]

(Dollars in billions)	Derivative Assets	Derivative Liabilities	Derivative Assets	Derivative Liabilities
	December 31, 2021		December 31, 2020	
Interest rate contracts				
Over-the-counter	$ 171.3	$ 166.3	$ 247.7	$ 243.5
Exchange-traded	0.2	—	—	—
Over-the-counter cleared	22.6	22.5	10.2	9.1
Foreign exchange contracts				
Over-the-counter	67.9	70.5	92.2	96.5
Over-the-counter cleared	1.1	1.1	1.4	1.3
Equity contracts				
Over-the-counter	29.2	32.9	31.3	28.3
Exchange-traded	38.3	38.4	32.3	31.0
Commodity contracts				
Over-the-counter	6.1	7.6	3.5	5.0
Exchange-traded	1.4	1.3	0.7	0.7
Over-the-counter cleared	0.1	0.1	—	—
Credit derivatives				
Over-the-counter	5.2	5.3	5.2	5.6
Over-the-counter cleared	1.8	1.8	2.2	1.9
Total gross derivative assets/liabilities, before netting				
Over-the-counter	279.7	282.6	379.9	378.9
Exchange-traded	39.9	39.7	33.0	31.7
Over-the-counter cleared	25.6	25.5	13.8	12.3
Less: Legally enforceable master netting agreements and cash collateral received/paid				
Over-the-counter	(250.3)	(254.6)	(345.7)	(347.2)
Exchange-traded	(37.8)	(37.8)	(29.5)	(29.5)
Over-the-counter cleared	(25.0)	(25.4)	(12.2)	(11.8)
Derivative assets/liabilities, after netting	32.1	30.0	39.3	34.4
Other gross derivative assets/liabilities [(2)]	3.2	7.7	7.9	11.1
Total derivative assets/liabilities	35.3	37.7	47.2	45.5
Less: Financial instruments collateral [(3)]	(11.8)	(10.6)	(16.1)	(16.6)
Total net derivative assets/liabilities	$ 23.5	$ 27.1	$ 31.1	$ 28.9

(1) Over-the-counter derivatives include bilateral transactions between the Corporation and a particular counterparty. Over-the-counter cleared derivatives include bilateral transactions between the Corporation and a counterparty where the transaction is cleared through a clearinghouse. Exchange-traded derivatives include listed options transacted on an exchange.
(2) Consists of derivatives entered into under master netting agreements where the enforceability of these agreements is uncertain under bankruptcy laws in some countries or industries.
(3) Amounts are limited to the derivative asset/liability balance and, accordingly, do not include excess collateral received/pledged. Financial instruments collateral includes securities collateral received or pledged and cash securities held and posted at third-party custodians that are not offset on the Consolidated Balance Sheet but shown as a reduction to derive net derivative assets and liabilities.

ALM and Risk Management Derivatives

The Corporation's ALM and risk management activities include the use of derivatives to mitigate risk to the Corporation including derivatives designated in qualifying hedge accounting relationships and derivatives used in other risk management activities. Interest rate, foreign exchange, equity, commodity and credit contracts are utilized in the Corporation's ALM and risk management activities.

The Corporation maintains an overall interest rate risk management strategy that incorporates the use of interest rate contracts, which are generally non-leveraged generic interest rate and basis swaps, options, futures and forwards, to minimize significant fluctuations in earnings caused by interest rate volatility. The Corporation's goal is to manage interest rate sensitivity and volatility so that movements in interest rates do not significantly adversely affect earnings or capital. As a result of interest rate fluctuations, hedged fixed-rate assets and liabilities appreciate or depreciate in fair value. Gains or losses on the derivative instruments that are linked to the hedged fixed-rate assets and liabilities are expected to substantially offset this unrealized appreciation or depreciation.

Market risk, including interest rate risk, can be substantial in the mortgage business. Market risk in the mortgage business is the risk that values of mortgage assets or revenues will be adversely affected by changes in market conditions such as interest rate movements. To mitigate the interest rate risk in mortgage banking production income, the Corporation utilizes forward loan sale commitments and other derivative instruments, including purchased options, and certain debt securities. The Corporation also utilizes derivatives such as interest rate options, interest rate swaps, forward settlement contracts and eurodollar futures to hedge certain market risks of MSRs.

The Corporation uses foreign exchange contracts to manage the foreign exchange risk associated with certain foreign currency-denominated assets and liabilities, as well as the Corporation's investments in non-U.S. subsidiaries. Exposure to loss on these contracts will increase or decrease over their respective lives as currency exchange and interest rates fluctuate.

The Corporation purchases credit derivatives to manage credit risk related to certain funded and unfunded credit exposures. Credit derivatives include credit default swaps (CDS), total return swaps and swaptions. These derivatives are recorded on the Consolidated Balance Sheet at fair value with changes in fair value recorded in other income.

Derivatives Designated as Accounting Hedges

The Corporation uses various types of interest rate and foreign exchange derivative contracts to protect against changes in the fair value of its assets and liabilities due to fluctuations in interest rates and exchange rates (fair value hedges). The Corporation also uses these types of contracts to protect against changes in the cash flows of its assets and liabilities,

and other forecasted transactions (cash flow hedges). The Corporation hedges its net investment in consolidated non-U.S. operations determined to have functional currencies other than the U.S. dollar using forward exchange contracts and cross-currency basis swaps, and by issuing foreign currency-denominated debt (net investment hedges).

Fair Value Hedges

The table below summarizes information related to fair value hedges for 2021, 2020 and 2019.

Gains and Losses on Derivatives Designated as Fair Value Hedges

	Derivative			Hedged Item		
(Dollars in millions)	2021	2020	2019	2021	2020	2019
Interest rate risk on long-term debt [1]	$ (7,018)	$ 7,091	$ 6,113	$ 6,838	$ (7,220)	$ (6,110)
Interest rate and foreign currency risk on long-term debt [2]	(90)	783	119	79	(783)	(101)
Interest rate risk on available-for-sale securities [3]	5,203	(44)	(102)	(5,167)	49	98
Total	$ (1,905)	$ 7,830	$ 6,130	$ 1,750	$ (7,954)	$ (6,113)

(1) Amounts are recorded in interest expense in the Consolidated Statement of Income.
(2) For 2021, 2020 and 2019, the derivative amount includes gains (losses) of $(73) million, $701 million and $73 million in interest expense, $0, $73 million and $28 million in market making and similar activities, and $(17) million, $9 million and $18 million in accumulated OCI, respectively. Line item totals are in the Consolidated Statement of Income and on the Consolidated Balance Sheet.
(3) Amounts are recorded in interest income in the Consolidated Statement of Income.

The table below summarizes the carrying value of hedged assets and liabilities that are designated and qualifying in fair value hedging relationships along with the cumulative amount of fair value hedging adjustments included in the carrying value that have been recorded in the current hedging relationships. These fair value hedging adjustments are open basis adjustments that are not subject to amortization as long as the hedging relationship remains designated.

Designated Fair Value Hedged Assets and Liabilities

	December 31, 2021		December 31, 2020	
(Dollars in millions)	Carrying Value	Cumulative Fair Value Adjustments [1]	Carrying Value	Cumulative Fair Value Adjustments [1]
Long-term debt [2]	$ 181,745	$ 3,987	$ 150,556	$ 8,910
Available-for-sale debt securities [2, 3, 4]	209,038	(2,294)	116,252	114
Trading account assets [5]	2,067	32	427	15

(1) Increase (decrease) to carrying value.
(2) At December 31, 2021 and 2020, the cumulative fair value adjustments remaining on long-term debt and available-for-sale debt securities from discontinued hedging relationships resulted in an increase in the related liability of $1.5 billion and $3.7 billion and a decrease in the related asset of $1.0 billion and $69 million, which are being amortized over the remaining contractual life of the de-designated hedged items.
(3) These amounts include the amortized cost of the prepayable financial assets used to designate hedging relationships in which the hedged item is the last layer expected to be remaining at the end of the hedging relationship (i.e. last-of-layer hedging relationship). At December 31, 2021 and 2020, the amortized cost of the closed portfolios used in these hedging relationships was $21.1 billion and $34.6 billion, of which $6.9 billion and $7.0 billion was designated in the last-of-layer hedging relationship. At December 31, 2021, the cumulative adjustment associated with these hedging relationships was a decrease of $172 million. At December 31, 2020, the cumulative adjustment was insignificant.
(4) Carrying value represents amortized cost.
(5) Represents hedging activities related to certain commodities inventory.

Cash Flow and Net Investment Hedges

The table below summarizes certain information related to cash flow hedges and net investment hedges for 2021, 2020 and 2019. Of the $1.9 billion after-tax net loss ($2.5 billion pretax) on derivatives in accumulated OCI at December 31, 2021, gains of $477 million after-tax ($630 million pretax) related to both open and terminated cash flow hedges are expected to be reclassified into earnings in the next 12 months. These net gains reclassified into earnings are expected to primarily increase net interest income related to the respective hedged items. For terminated cash flow hedges, the time period over which the majority of the forecasted transactions are hedged is approximately 3 years, with a maximum length of time for certain forecasted transactions of 15 years.

Gains and Losses on Derivatives Designated as Cash Flow and Net Investment Hedges

	Gains (Losses) Recognized in Accumulated OCI on Derivatives			Gains (Losses) in Income Reclassified from Accumulated OCI		
(Dollars in millions, amounts pretax)	2021	2020	2019	2021	2020	2019
Cash flow hedges						
Interest rate risk on variable-rate assets [1]	$ (2,686)	$ 763	$ 671	$ 148	$ (7)	$ (104)
Price risk on forecasted MBS purchases [1]	(249)	241	—	26	9	—
Price risk on certain compensation plans [2]	93	85	34	55	12	(2)
Total	$ (2,842)	$ 1,089	$ 705	$ 229	$ 14	$ (106)
Net investment hedges						
Foreign exchange risk [3]	$ 1,451	$ (834)	$ 22	$ 23	$ 4	$ 366

(1) Amounts reclassified from accumulated OCI are recorded in interest income in the Consolidated Statement of Income.
(2) Amounts reclassified from accumulated OCI are recorded in compensation and benefits expense in the Consolidated Statement of Income.
(3) Amounts reclassified from accumulated OCI are recorded in other income in the Consolidated Statement of Income. Amounts excluded from effectiveness testing and recognized in market making and similar activities were gains (losses) of $(123) million, $(11) million and $154 million in 2021, 2020 and 2019, respectively.

Other Risk Management Derivatives

Other risk management derivatives are used by the Corporation to reduce certain risk exposures by economically hedging various assets and liabilities. The table below presents gains (losses) on these derivatives for 2021, 2020 and 2019. These gains (losses) are largely offset by the income or expense recorded on the hedged item.

Gains and Losses on Other Risk Management Derivatives

(Dollars in millions)	2021	2020	2019
Interest rate risk on mortgage activities [1, 2]	**$ (18)**	$ 611	$ 388
Credit risk on loans [2]	**(25)**	(68)	(58)
Interest rate and foreign currency risk on asset and liability management activities [3]	**1,757**	(2,971)	1,112
Price risk on certain compensation plans [4]	**917**	700	943

(1) Includes hedges of interest rate risk on MSRs and IRLCs to originate mortgage loans that will be held for sale.
(2) Gains (losses) on these derivatives are recorded in other income.
(3) Gains (losses) on these derivatives are recorded in market making and similar activities.
(4) Gains (losses) on these derivatives are recorded in compensation and benefits expense.

Transfers of Financial Assets with Risk Retained through Derivatives

The Corporation enters into certain transactions involving the transfer of financial assets that are accounted for as sales where substantially all of the economic exposure to the transferred financial assets is retained through derivatives (e.g., interest rate and/or credit), but the Corporation does not retain control over the assets transferred. At December 31, 2021 and 2020, the Corporation had transferred $4.8 billion and $5.2 billion of non-U.S. government-guaranteed mortgage-backed securities to a third-party trust and retained economic exposure to the transferred assets through derivative contracts. In connection with these transfers, the Corporation received gross cash proceeds of $4.8 billion and $5.2 billion at the transfer dates. At December 31, 2021 and 2020, the fair value of the transferred securities was $5.0 billion and $5.5 billion.

Sales and Trading Revenue

The Corporation enters into trading derivatives to facilitate client transactions and to manage risk exposures arising from trading account assets and liabilities. It is the Corporation's policy to include these derivative instruments in its trading activities, which include derivatives and non-derivative cash instruments. The resulting risk from these derivatives is managed on a portfolio basis as part of the Corporation's *Global Markets* business segment. The related sales and trading revenue generated within *Global Markets* is recorded in various income statement line items, including market making and similar activities and net interest income as well as other revenue categories.

Sales and trading revenue includes changes in the fair value and realized gains and losses on the sales of trading and other assets, net interest income, and fees primarily from commissions on equity securities. Revenue is generated by the difference in the client price for an instrument and the price at which the trading desk can execute the trade in the dealer market. For equity securities, commissions related to purchases and sales are recorded in the "Other" column in the Sales and Trading Revenue table. Changes in the fair value of these securities are included in market making and similar activities. For debt securities, revenue, with the exception of interest associated with the debt securities, is typically included in market making and similar activities. Unlike commissions for equity securities, the initial revenue related to broker-dealer services for debt securities is typically included in the pricing of the instrument rather than being charged through separate fee arrangements. Therefore, this revenue is recorded in market making and similar activities as part of the initial mark to fair value. For derivatives, the majority of revenue is included in market making and similar activities. In transactions where the Corporation acts as agent, which include exchange-traded futures and options, fees are recorded in other income.

The table below, which includes both derivatives and non-derivative cash instruments, identifies the amounts in the respective income statement line items attributable to the Corporation's sales and trading revenue in *Global Markets*, categorized by primary risk, for 2021, 2020 and 2019. This table includes debit valuation adjustment (DVA) and funding valuation adjustment (FVA) gains (losses). *Global Markets* results in *Note 23 – Business Segment Information* are presented on a fully taxable-equivalent (FTE) basis. The table below is not presented on an FTE basis.

Sales and Trading Revenue

(Dollars in millions)	Market making and similar activities	Net Interest Income	Other [1]	Total
		2021		
Interest rate risk	**$ 523**	**$ 1,794**	**$ 217**	**$ 2,534**
Foreign exchange risk	**1,505**	**(80)**	**14**	**1,439**
Equity risk	**4,581**	**(5)**	**1,834**	**6,410**
Credit risk	**1,390**	**1,684**	**556**	**3,630**
Other risk [2]	**759**	**(128)**	**124**	**755**
Total sales and trading revenue	**$ 8,758**	**$ 3,265**	**$ 2,745**	**$ 14,768**
		2020		
Interest rate risk	$ 2,236	$ 2,279	$ 229	$ 4,744
Foreign exchange risk	1,486	(19)	2	1,469
Equity risk	3,656	(77)	1,801	5,380
Credit risk	783	1,758	331	2,872
Other risk [2]	308	4	44	356
Total sales and trading revenue	$ 8,469	$ 3,945	$ 2,407	$ 14,821
		2019		
Interest rate risk	$ 1,046	$ 1,697	$ 113	$ 2,856
Foreign exchange risk	1,293	61	56	1,410
Equity risk	3,563	(634)	1,569	4,498
Credit risk	1,040	1,928	519	3,487
Other risk [2]	120	70	54	244
Total sales and trading revenue	$ 7,062	$ 3,122	$ 2,311	$ 12,495

(1) Represents amounts in investment and brokerage services and other income that are recorded in *Global Markets* and included in the definition of sales and trading revenue. Includes investment and brokerage services revenue of $1.9 billion, $1.9 billion and $1.7 billion in 2021, 2020 and 2019, respectively.
(2) Includes commodity risk.

Credit Derivatives

The Corporation enters into credit derivatives primarily to facilitate client transactions and to manage credit risk exposures. Credit derivatives derive value based on an underlying third-party referenced obligation or a portfolio of referenced obligations and generally require the Corporation, as the seller of credit protection, to make payments to a buyer upon the occurrence of a predefined credit event. Such credit events generally include bankruptcy of the referenced credit entity and failure to pay under the obligation, as well as acceleration of indebtedness and payment repudiation or moratorium. For credit derivatives based on a portfolio of referenced credits or credit indices, the Corporation may not be required to make payment until a specified amount of loss has

occurred and/or may only be required to make payment up to a specified amount.

Credit derivatives are classified as investment and non-investment grade based on the credit quality of the underlying referenced obligation. The Corporation considers ratings of BBB- or higher as investment grade. Non-investment grade includes non-rated credit derivative instruments. The Corporation discloses internal categorizations of investment grade and non-investment grade consistent with how risk is managed for these instruments.

Credit derivative instruments where the Corporation is the seller of credit protection and their expiration at December 31, 2021 and 2020 are summarized in the table below.

Credit Derivative Instruments

(Dollars in millions)	Less than One Year	One to Three Years	Three to Five Years	Over Five Years	Total
			December 31, 2021		
			Carrying Value		
Credit default swaps:					
Investment grade	**$ —**	**$ 5**	**$ 79**	**$ 49**	**$ 133**
Non-investment grade	**34**	**250**	**453**	**769**	**1,506**
Total	**34**	**255**	**532**	**818**	**1,639**
Total return swaps/options:					
Investment grade	**35**	**388**	**—**	**—**	**423**
Non-investment grade	**105**	**—**	**16**	**—**	**121**
Total	**140**	**388**	**16**	**—**	**544**
Total credit derivatives	**$ 174**	**$ 643**	**$ 548**	**$ 818**	**$ 2,183**
Credit-related notes:					
Investment grade	**$ —**	**$ —**	**$ 36**	**$ 412**	**$ 448**
Non-investment grade	**5**	**—**	**9**	**1,334**	**1,348**
Total credit-related notes	**$ 5**	**$ —**	**$ 45**	**$ 1,746**	**$ 1,796**
			Maximum Payout/Notional		
Credit default swaps:					
Investment grade	**$ 34,503**	**$ 66,334**	**$ 73,444**	**$ 17,844**	**$ 192,125**
Non-investment grade	**16,119**	**29,233**	**34,356**	**7,961**	**87,669**
Total	**50,622**	**95,567**	**107,800**	**25,805**	**279,794**
Total return swaps/options:					
Investment grade	**49,626**	**11,494**	**78**	**—**	**61,198**
Non-investment grade	**22,621**	**717**	**642**	**73**	**24,053**
Total	**72,247**	**12,211**	**720**	**73**	**85,251**
Total credit derivatives	**$ 122,869**	**$ 107,778**	**$ 108,520**	**$ 25,878**	**$ 365,045**
			December 31, 2020		
			Carrying Value		
Credit default swaps:					
Investment grade	$ —	$ 1	$ 35	$ 94	$ 130
Non-investment grade	26	233	364	1,163	1,786
Total	26	234	399	1,257	1,916
Total return swaps/options:					
Investment grade	21	4	—	—	25
Non-investment grade	345	—	—	—	345
Total	366	4	—	—	370
Total credit derivatives	$ 392	$ 238	$ 399	$ 1,257	$ 2,286
Credit-related notes:					
Investment grade	$ —	$ —	$ —	$ 572	$ 572
Non-investment grade	64	2	10	947	1,023
Total credit-related notes	$ 64	$ 2	$ 10	$ 1,519	$ 1,595
			Maximum Payout/Notional		
Credit default swaps:					
Investment grade	$ 33,474	$ 75,731	$ 87,218	$ 16,822	$ 213,245
Non-investment grade	13,664	28,770	35,978	9,852	88,264
Total	47,138	104,501	123,196	26,674	301,509
Total return swaps/options:					
Investment grade	30,961	1,061	77	—	32,099
Non-investment grade	36,128	364	27	5	36,524
Total	67,089	1,425	104	5	68,623
Total credit derivatives	$ 114,227	$ 105,926	$ 123,300	$ 26,679	$ 370,132

The notional amount represents the maximum amount payable by the Corporation for most credit derivatives. However, the Corporation does not monitor its exposure to credit derivatives based solely on the notional amount because this measure does not take into consideration the probability of occurrence. As such, the notional amount is not a reliable indicator of the Corporation's exposure to these contracts. Instead, a risk framework is used to define risk tolerances and establish limits so that certain credit risk-related losses occur within acceptable, predefined limits.

Credit-related notes in the table above include investments in securities issued by CDO, collateralized loan obligation (CLO)

and credit-linked note vehicles. These instruments are primarily classified as trading securities. The carrying value of these instruments equals the Corporation's maximum exposure to loss. The Corporation is not obligated to make any payments to the entities under the terms of the securities owned.

Credit-related Contingent Features and Collateral

The Corporation executes the majority of its derivative contracts in the OTC market with large, international financial institutions, including broker-dealers and, to a lesser degree, with a variety of non-financial companies. A significant majority of the derivative transactions are executed on a daily margin basis. Therefore, events such as a credit rating downgrade (depending on the ultimate rating level) or a breach of credit covenants would typically require an increase in the amount of collateral required of the counterparty, where applicable, and/or allow the Corporation to take additional protective measures such as early termination of all trades. Further, as previously discussed on page 144, the Corporation enters into legally enforceable master netting agreements that reduce risk by permitting closeout and netting of transactions with the same counterparty upon the occurrence of certain events.

Certain of the Corporation's derivative contracts contain credit risk-related contingent features, primarily in the form of ISDA master netting agreements and credit support documentation that enhance the creditworthiness of these instruments compared to other obligations of the respective counterparty with whom the Corporation has transacted. These contingent features may be for the benefit of the Corporation as well as its counterparties with respect to changes in the Corporation's creditworthiness and the mark-to-market exposure under the derivative transactions. At December 31, 2021 and 2020, the Corporation held cash and securities collateral of $91.4 billion and $96.5 billion and posted cash and securities collateral of $79.3 billion and $88.6 billion in the normal course of business under derivative agreements, excluding cross-product margining agreements where clients are permitted to margin on a net basis for both derivative and secured financing arrangements.

In connection with certain OTC derivative contracts and other trading agreements, the Corporation can be required to provide additional collateral or to terminate transactions with certain counterparties in the event of a downgrade of the senior debt ratings of the Corporation or certain subsidiaries. The amount of additional collateral required depends on the contract and is usually a fixed incremental amount and/or the market value of the exposure.

At December 31, 2021, the amount of collateral, calculated based on the terms of the contracts, that the Corporation and certain subsidiaries could be required to post to counterparties but had not yet posted to counterparties was $2.3 billion, including $1.4 billion for Bank of America, National Association (BANA).

Some counterparties are currently able to unilaterally terminate certain contracts, or the Corporation or certain subsidiaries may be required to take other action such as find a suitable replacement or obtain a guarantee. At December 31, 2021 and 2020, the liability recorded for these derivative contracts was not significant.

The following table presents the amount of additional collateral that would have been contractually required by derivative contracts and other trading agreements at December 31, 2021 if the rating agencies had downgraded their long-term senior debt ratings for the Corporation or certain subsidiaries by one incremental notch and by an additional second incremental notch. The table also presents derivative liabilities that would be subject to unilateral termination by counterparties upon downgrade of the Corporation's or certain subsidiaries' long-term senior debt ratings.

Additional Collateral Required to be Posted and Derivative Liabilities Subject to Unilateral Termination Upon Downgrade at December 31, 2021

(Dollars in millions)	One incremental notch	Second incremental notch
Additional collateral required to be posted upon downgrade		
Bank of America Corporation	$ 316	$ 823
Bank of America, N.A. and subsidiaries [(1)]	75	646
Derivative liabilities subject to unilateral termination upon downgrade		
Derivative liabilities	$ 32	$ 994
Collateral posted	25	634

(1) Included in Bank of America Corporation collateral requirements in this table.

Valuation Adjustments on Derivatives

The Corporation records credit risk valuation adjustments on derivatives in order to properly reflect the credit quality of the counterparties and its own credit quality. The Corporation calculates valuation adjustments on derivatives based on a modeled expected exposure that incorporates current market risk factors. The exposure also takes into consideration credit mitigants such as enforceable master netting agreements and collateral. CDS spread data is used to estimate the default probabilities and severities that are applied to the exposures. Where no observable credit default data is available for counterparties, the Corporation uses proxies and other market data to estimate default probabilities and severity.

The table below presents credit valuation adjustment (CVA), DVA and FVA gains (losses) on derivatives (excluding the effect of any related hedge activities), which are recorded in market making and similar activities, for 2021, 2020 and 2019. CVA gains reduce the cumulative CVA thereby increasing the derivative assets balance. DVA gains increase the cumulative DVA thereby decreasing the derivative liabilities balance. CVA and DVA losses have the opposite impact. FVA gains related to derivative assets reduce the cumulative FVA thereby increasing the derivative assets balance. FVA gains related to derivative liabilities increase the cumulative FVA thereby decreasing the derivative liabilities balance. FVA losses have the opposite impact.

Valuation Adjustments Gains (Losses) on Derivatives [(1)]

(Dollars in millions)	**2021**	2020	2019
Derivative assets (CVA)	**$ 208**	$ (118)	$ 72
Derivative assets/liabilities (FVA)	**(2)**	(24)	(2)
Derivative liabilities (DVA)	**3**	24	(147)

(1) At December 31, 2021, 2020 and 2019, cumulative CVA reduced the derivative assets balance by $438 million, $646 million, and $528 million cumulative FVA reduced the net derivatives balance by $179 million, $177 million and $153 million, and cumulative DVA reduced the derivative liabilities balance by $312 million, $309 million and $285 million, respectively.

NOTE 4 Securities

The table below presents the amortized cost, gross unrealized gains and losses, and fair value of AFS debt securities, other debt securities carried at fair value and HTM debt securities at December 31, 2021 and 2020.

Debt Securities

(Dollars in millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	December 31, 2021				December 31, 2020			
Available-for-sale debt securities								
Mortgage-backed securities:								
Agency	$ 45,268	$ 1,257	$ (186)	$ 46,339	$ 59,518	$ 2,370	$ (39)	$ 61,849
Agency-collateralized mortgage obligations	3,331	74	(25)	3,380	5,112	161	(13)	5,260
Commercial	19,036	647	(79)	19,604	15,470	1,025	(4)	16,491
Non-agency residential [1]	591	25	(33)	583	899	127	(17)	1,009
Total mortgage-backed securities	68,226	2,003	(323)	69,906	80,999	3,683	(73)	84,609
U.S. Treasury and government agencies	197,853	1,610	(318)	199,145	114,157	2,236	(13)	116,380
Non-U.S. securities	11,933	—	—	11,933	14,009	15	(7)	14,017
Other taxable securities	2,725	39	(3)	2,761	2,656	61	(6)	2,711
Tax-exempt securities	15,155	317	(39)	15,433	16,417	389	(32)	16,774
Total available-for-sale debt securities	295,892	3,969	(683)	299,178	228,238	6,384	(131)	234,491
Other debt securities carried at fair value [2]	8,873	105	(83)	8,895	11,720	429	(39)	12,110
Total debt securities carried at fair value	304,765	4,074	(766)	308,073	239,958	6,813	(170)	246,601
Held-to-maturity debt securities								
Agency mortgage-backed securities	553,721	3,855	(10,366)	547,210	414,289	9,768	(36)	424,021
U.S. Treasury and government agencies	111,859	254	(2,395)	109,718	16,084	—	(71)	16,013
Other taxable securities	9,011	147	(196)	8,962	7,906	327	(87)	8,146
Total held-to-maturity debt securities	674,591	4,256	(12,957)	665,890	438,279	10,095	(194)	448,180
Total debt securities [3,4]	$ 979,356	$ 8,330	$ (13,723)	$ 973,963	$ 678,237	$ 16,908	$ (364)	$ 694,781

[1] At December 31, 2021 and 2020, the underlying collateral type included approximately 21 percent and 37 percent prime, 0 percent and 2 percent Alt-A and 79 percent and 61 percent subprime.
[2] Primarily includes non-U.S. securities used to satisfy certain international regulatory requirements. Any changes in value are reported in market making and similar activities. For detail on the components, see *Note 20 – Fair Value Measurements*.
[3] Includes securities pledged as collateral of $111.9 billion and $65.5 billion at December 31, 2021 and 2020.
[4] The Corporation held debt securities from FNMA and FHLMC that each exceeded 10 percent of shareholders' equity, with an amortized cost of $345.3 billion and $205.3 billion, and a fair value of $342.5 billion and $202.4 billion at December 31, 2021, and an amortized cost of $260.1 billion and $118.1 billion, and a fair value of $267.5 billion and $120.7 billion at December 31, 2020.

At December 31, 2021, the accumulated net unrealized gain on AFS debt securities, excluding the amount related to debt securities previously transferred to held to maturity, included in accumulated OCI was $2.5 billion, net of the related income tax expense of $817 million. At December 31, 2021 and 2020, nonperforming AFS debt securities held by the Corporation were insignificant.

At December 31, 2021 and 2020, the Corporation had $268.5 billion and $200.0 billion in AFS debt securities, which were primarily U.S. agency and U.S. Treasury securities that have a zero credit loss assumption. For the remaining $30.7 billion and $34.5 billion in AFS debt securities at December 31, 2021 and 2020, the amount of ECL was insignificant. Substantially all of the Corporation's HTM debt securities consist of U.S. agency and U.S. Treasury securities and have a zero credit loss assumption.

At December 31, 2021 and 2020, the Corporation held equity securities at an aggregate fair value of $513 million and $769 million and other equity securities, as valued under the measurement alternative, at a carrying value of $266 million and $240 million, both of which are included in other assets. At December 31, 2021 and 2020, the Corporation also held money market investments at a fair value of $707 million and $1.6 billion, which are included in time deposits placed and other short-term investments.

The gross realized gains and losses on sales of AFS debt securities for 2021, 2020 and 2019 are presented in the table below.

Gains and Losses on Sales of AFS Debt Securities

(Dollars in millions)	2021	2020	2019
Gross gains	$ 49	$ 423	$ 336
Gross losses	(27)	(12)	(119)
Net gains on sales of AFS debt securities	$ 22	$ 411	$ 217
Income tax expense attributable to realized net gains on sales of AFS debt securities	$ 5	$ 103	$ 54

The table below presents the fair value and the associated gross unrealized losses on AFS debt securities and whether these securities have had gross unrealized losses for less than 12 months or for 12 months or longer at December 31, 2021 and 2020.

Total AFS Debt Securities in a Continuous Unrealized Loss Position

	Less than Twelve Months		Twelve Months or Longer		Total	
(Dollars in millions)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
	December 31, 2021					
Continuously unrealized loss-positioned AFS debt securities						
Mortgage-backed securities:						
Agency	**$ 11,733**	**$ (166)**	**$ 815**	**$ (20)**	**$ 12,548**	**$ (186)**
Agency-collateralized mortgage obligations	**1,427**	**(22)**	**122**	**(3)**	**1,549**	**(25)**
Commercial	**3,451**	**(41)**	**776**	**(38)**	**4,227**	**(79)**
Non-agency residential	**241**	**(13)**	**174**	**(20)**	**415**	**(33)**
Total mortgage-backed securities	**16,852**	**(242)**	**1,887**	**(81)**	**18,739**	**(323)**
U.S. Treasury and government agencies	**103,307**	**(272)**	**4,850**	**(46)**	**108,157**	**(318)**
Other taxable securities	**—**	**—**	**82**	**(3)**	**82**	**(3)**
Tax-exempt securities	**502**	**(16)**	**109**	**(23)**	**611**	**(39)**
Total AFS debt securities in a continuous unrealized loss position	**$ 120,661**	**$ (530)**	**$ 6,928**	**$ (153)**	**$ 127,589**	**$ (683)**
	December 31, 2020					
Continuously unrealized loss-positioned AFS debt securities						
Mortgage-backed securities:						
Agency	$ 2,841	$ (39)	$ 2	$ —	$ 2,843	$ (39)
Agency-collateralized mortgage obligations	187	(2)	364	(11)	551	(13)
Commercial	566	(4)	9	—	575	(4)
Non-agency residential	342	(9)	56	(8)	398	(17)
Total mortgage-backed securities	3,936	(54)	431	(19)	4,367	(73)
U.S. Treasury and government agencies	8,282	(9)	498	(4)	8,780	(13)
Non-U.S. securities	1,861	(6)	135	(1)	1,996	(7)
Other taxable securities	576	(2)	396	(4)	972	(6)
Tax-exempt securities	4,108	(29)	617	(3)	4,725	(32)
Total AFS debt securities in a continuous unrealized loss position	$ 18,763	$ (100)	$ 2,077	$ (31)	$ 20,840	$ (131)

The remaining contractual maturity distribution and yields of the Corporation's debt securities carried at fair value and HTM debt securities at December 31, 2021 are summarized in the table below. Actual duration and yields may differ as prepayments on the loans underlying the MBS or other ABS are passed through to the Corporation.

Maturities of Debt Securities Carried at Fair Value and Held-to-maturity Debt Securities

	Due in One Year or Less		Due after One Year through Five Years		Due after Five Years through Ten Years		Due after Ten Years		Total	
(Dollars in millions)	Amount	Yield [1]	Amount	Yield [1]	Amount	Yield [1]	Amount	Yield [1]	Amount	Yield [1]
Amortized cost of debt securities carried at fair value										
Mortgage-backed securities:										
Agency	$ —	— %	$ 5	5.00 %	$ 49	4.63 %	$ 45,214	3.11 %	$ 45,268	3.11 %
Agency-collateralized mortgage obligations	—	—	—	—	20	2.50	3,311	2.91	3,331	2.91
Commercial	363	2.30	10,123	2.48	6,285	1.79	2,278	1.87	19,049	2.18
Non-agency residential	—	—	—	—	—	—	1,112	6.43	1,112	6.43
Total mortgage-backed securities	363	2.30	10,128	2.48	6,354	1.81	51,915	3.11	68,760	2.89
U.S. Treasury and government agencies	6,564	1.22	39,875	1.80	151,962	1.20	27	2.61	198,428	1.32
Non-U.S. securities	18,645	0.20	1,045	3.61	—	—	7	9.15	19,697	0.38
Other taxable securities	562	1.49	1,646	1.97	308	2.04	209	1.76	2,725	1.86
Tax-exempt securities	2,485	1.06	6,520	1.42	3,105	1.81	3,045	1.46	15,155	1.45
Total amortized cost of debt securities carried at fair value	**$ 28,619**	**0.56**	**$ 59,214**	**1.89**	**$ 161,729**	**1.23**	**$ 55,203**	**3.02**	**$ 304,765**	**1.62**
Amortized cost of HTM debt securities										
Agency mortgage-backed securities	$ —	— %	$ —	— %	$ 4	2.00 %	$ 553,717	2.13 %	$ 553,721	2.13 %
U.S. Treasury and government agencies	—	—	—	—	111,859	1.35	—	—	111,859	1.35
Other taxable securities	37	5.31	1,035	2.21	473	2.66	7,466	2.51	9,011	2.50
Total amortized cost of HTM debt securities	**$ 37**	**5.31**	**$ 1,035**	**2.21**	**$ 112,336**	**1.35**	**$ 561,183**	**2.13**	**$ 674,591**	**2.00**
Debt securities carried at fair value										
Mortgage-backed securities:										
Agency	$ —		$ 5		$ 53		$ 46,281		$ 46,339	
Agency-collateralized mortgage obligations	—		—		20		3,360		3,380	
Commercial	366		10,562		6,379		2,310		19,617	
Non-agency residential	—		4		—		1,164		1,168	
Total mortgage-backed securities	366		10,571		6,452		53,115		70,504	
U.S. Treasury and government agencies	6,614		40,912		152,168		26		199,720	
Non-U.S. securities	18,599		1,046		—		7		19,652	
Other taxable securities	566		1,676		310		212		2,764	
Tax-exempt securities	2,489		6,660		3,223		3,061		15,433	
Total debt securities carried at fair value	**$ 28,634**		**$ 60,865**		**$ 162,153**		**$ 56,421**		**$ 308,073**	
Fair value of HTM debt securities										
Agency mortgage-backed securities	$ —		$ —		$ 4		$ 547,206		$ 547,210	
U.S. Treasury and government agencies	—		—		109,718		—		109,718	
Other taxable securities	37		1,060		483		7,382		8,962	
Total fair value of HTM debt securities	**$ 37**		**$ 1,060**		**$ 110,205**		**$ 554,588**		**$ 665,890**	

[1] The weighted-average yield is computed based on a constant effective interest rate over the contractual life of each security. The average yield considers the contractual coupon and the amortization of premiums and accretion of discounts, excluding the effect of related hedging derivatives.

NOTE 5 Outstanding Loans and Leases and Allowance for Credit Losses

The following tables present total outstanding loans and leases and an aging analysis for the Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments, by class of financing receivables, at December 31, 2021 and 2020.

(Dollars in millions)	30-59 Days Past Due [1]	60-89 Days Past Due [1]	90 Days or More Past Due [1]	Total Past Due 30 Days or More	Total Current or Less Than 30 Days Past Due [1]	Loans Accounted for Under the Fair Value Option	Total Outstandings
	December 31, 2021						
Consumer real estate							
Residential mortgage	$ 1,005	$ 297	$ 1,571	$ 2,873	$ 219,090		$ 221,963
Home equity	123	69	369	561	27,374		27,935
Credit card and other consumer							
Credit card	298	212	487	997	80,441		81,438
Direct/Indirect consumer [2]	147	52	18	217	103,343		103,560
Other consumer	—	—	—	—	190		190
Total consumer	1,573	630	2,445	4,648	430,438		435,086
Consumer loans accounted for under the fair value option [3]						$ 618	618
Total consumer loans and leases	1,573	630	2,445	4,648	430,438	618	435,704
Commercial							
U.S. commercial	815	308	396	1,519	324,417		325,936
Non-U.S. commercial	148	20	83	251	113,015		113,266
Commercial real estate [4]	115	34	285	434	62,575		63,009
Commercial lease financing	104	28	13	145	14,680		14,825
U.S. small business commercial [5]	129	259	89	477	18,706		19,183
Total commercial	1,311	649	866	2,826	533,393		536,219
Commercial loans accounted for under the fair value option [3]						7,201	7,201
Total commercial loans and leases	1,311	649	866	2,826	533,393	7,201	543,420
Total loans and leases [6]	$ 2,884	$ 1,279	$ 3,311	$ 7,474	$ 963,831	$ 7,819	$ 979,124
Percentage of outstandings	0.29 %	0.13 %	0.34 %	0.76 %	98.44 %	0.80 %	100.00 %

(1) Consumer real estate loans 30-59 days past due includes fully-insured loans of $164 million and nonperforming loans of $118 million. Consumer real estate loans 60-89 days past due includes fully-insured loans of $89 million and nonperforming loans of $100 million. Consumer real estate loans 90 days or more past due includes fully-insured loans of $633 million. Consumer real estate loans current or less than 30 days past due includes $1.4 billion and direct/indirect consumer includes $55 million of nonperforming loans. For information on the Corporation's interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles*.

(2) Total outstandings primarily includes auto and specialty lending loans and leases of $48.5 billion, U.S. securities-based lending loans of $51.1 billion and non-U.S. consumer loans of $3.0 billion.

(3) Consumer loans accounted for under the fair value option includes residential mortgage loans of $279 million and home equity loans of $339 million. Commercial loans accounted for under the fair value option includes U.S. commercial loans of $4.6 billion and non-U.S. commercial loans of $2.6 billion. For more information, see *Note 20 – Fair Value Measurements* and *Note 21 – Fair Value Option*.

(4) Total outstandings includes U.S. commercial real estate loans of $58.2 billion and non-U.S. commercial real estate loans of $4.8 billion.

(5) Includes Paycheck Protection Program loans.

(6) Total outstandings includes loans and leases pledged as collateral of $13.0 billion. The Corporation also pledged $146.6 billion of loans with no related outstanding borrowings to secure potential borrowing capacity with the Federal Reserve Bank and Federal Home Loan Bank.

(Dollars in millions)	30-59 Days Past Due [1]	60-89 Days Past Due [1]	90 Days or More Past Due [1]	Total Past Due 30 Days or More	Total Current or Less Than 30 Days Past Due [1]	Loans Accounted for Under the Fair Value Option	Total Outstandings
	December 31, 2020						
Consumer real estate							
Residential mortgage	$ 1,430	$ 297	$ 1,699	$ 3,426	$ 220,129		$ 223,555
Home equity	154	78	345	577	33,734		34,311
Credit card and other consumer							
Credit card	445	341	903	1,689	77,019		78,708
Direct/Indirect consumer [2]	209	67	37	313	91,050		91,363
Other consumer	—	—	—	—	124		124
Total consumer	2,238	783	2,984	6,005	422,056		428,061
Consumer loans accounted for under the fair value option [3]						$ 735	735
Total consumer loans and leases	2,238	783	2,984	6,005	422,056	735	428,796
Commercial							
U.S. commercial	561	214	512	1,287	287,441		288,728
Non-U.S. commercial	61	44	11	116	90,344		90,460
Commercial real estate [4]	128	113	226	467	59,897		60,364
Commercial lease financing	86	20	57	163	16,935		17,098
U.S. small business commercial [5]	84	56	123	263	36,206		36,469
Total commercial	920	447	929	2,296	490,823		493,119
Commercial loans accounted for under the fair value option [3]						5,946	5,946
Total commercial loans and leases	920	447	929	2,296	490,823	5,946	499,065
Total loans and leases [6]	$ 3,158	$ 1,230	$ 3,913	$ 8,301	$ 912,879	$ 6,681	$ 927,861
Percentage of outstandings	0.34 %	0.13 %	0.42 %	0.89 %	98.39 %	0.72 %	100.00 %

(1) Consumer real estate loans 30-59 days past due includes fully-insured loans of $225 million and nonperforming loans of $126 million. Consumer real estate loans 60-89 days past due includes fully-insured loans of $103 million and nonperforming loans of $95 million. Consumer real estate loans 90 days or more past due includes fully-insured loans of $762 million. Consumer real estate loans current or less than 30 days past due includes $1.2 billion and direct/indirect consumer includes $66 million of nonperforming loans. For information on the Corporation's interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles.*
(2) Total outstandings primarily includes auto and specialty lending loans and leases of $46.4 billion, U.S. securities-based lending loans of $41.1 billion and non-U.S. consumer loans of $3.0 billion.
(3) Consumer loans accounted for under the fair value option includes residential mortgage loans of $298 million and home equity loans of $437 million. Commercial loans accounted for under the fair value option includes U.S. commercial loans of $2.9 billion and non-U.S. commercial loans of $3.0 billion. For more information, see *Note 20 – Fair Value Measurements* and *Note 21 – Fair Value Option*.
(4) Total outstandings includes U.S. commercial real estate loans of $57.2 billion and non-U.S. commercial real estate loans of $3.2 billion.
(5) Includes Paycheck Protection Program loans.
(6) Total outstandings includes loans and leases pledged as collateral of $15.5 billion. The Corporation also pledged $153.1 billion of loans with no related outstanding borrowings to secure potential borrowing capacity with the Federal Reserve Bank and Federal Home Loan Bank.

The Corporation has entered into long-term credit protection agreements with FNMA and FHLMC on loans totaling $10.5 billion and $9.0 billion at December 31, 2021 and 2020, providing full credit protection on residential mortgage loans that become severely delinquent. All of these loans are individually insured, and therefore the Corporation does not record an allowance for credit losses related to these loans.

Nonperforming Loans and Leases

Commercial nonperforming loans decreased to $1.6 billion at December 31, 2021 from $2.2 billion at December 31, 2020. Consumer nonperforming loans increased to $3.0 billion at December 31, 2021 from $2.7 billion at December 31, 2020 driven by consumer real estate deferral activity.

The following table presents the Corporation's nonperforming loans and leases including nonperforming TDRs, and loans accruing past due 90 days or more at December 31, 2021 and 2020. Nonperforming LHFS are excluded from nonperforming loans and leases as they are recorded at either fair value or the lower of cost or fair value. For more information on the criteria for classification as nonperforming, see *Note 1 – Summary of Significant Accounting Principles.*

Credit Quality

(Dollars in millions)	Nonperforming Loans and Leases 2021	Nonperforming Loans and Leases 2020	Accruing Past Due 90 Days or More [1] 2021	Accruing Past Due 90 Days or More [1] 2020
	December 31			
Residential mortgage [2]	**$ 2,284**	$ 2,005	**$ 634**	$ 762
With no related allowance [3]	**1,950**	1,378	**—**	—
Home equity [2]	**630**	649	**—**	—
With no related allowance [3]	**414**	347	**—**	—
Credit Card	**n/a**	n/a	**487**	903
Direct/indirect consumer	**75**	71	**11**	33
Total consumer	**2,989**	2,725	**1,132**	1,698
U.S. commercial	**825**	1,243	**171**	228
Non-U.S. commercial	**268**	418	**19**	10
Commercial real estate	**382**	404	**40**	6
Commercial lease financing	**80**	87	**8**	25
U.S. small business commercial	**23**	75	**87**	115
Total commercial	**1,578**	2,227	**325**	384
Total nonperforming loans	**$ 4,567**	$ 4,952	**$ 1,457**	$ 2,082
Percentage of outstanding loans and leases	**0.47 %**	0.54 %	**0.15 %**	0.23 %

(1) For information on the Corporation's interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles..*
(2) Residential mortgage loans accruing past due 90 days or more are fully-insured loans. At December 31, 2021 and 2020 residential mortgage includes $444 million and $537 million of loans on which interest had been curtailed by the FHA, and therefore were no longer accruing interest, although principal was still insured, and $190 million and $225 million of loans on which interest was still accruing.
(3) Primarily relates to loans for which the estimated fair value of the underlying collateral less any costs to sell is greater than the amortized cost of the loans as of the reporting date.
n/a = not applicable

Credit Quality Indicators

The Corporation monitors credit quality within its Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments based on primary credit quality indicators. For more information on the portfolio segments, see *Note 1 – Summary of Significant Accounting Principles*. Within the Consumer Real Estate portfolio segment, the primary credit quality indicators are refreshed LTV and refreshed Fair Isaac Corporation (FICO) score. Refreshed LTV measures the carrying value of the loan as a percentage of the value of the property securing the loan, refreshed quarterly. Home equity loans are evaluated using combined loan-to-value (CLTV), which measures the carrying value of the Corporation's loan and available line of credit combined with any outstanding senior liens against the property as a percentage of the value of the property securing the loan, refreshed quarterly. FICO score measures the creditworthiness of the borrower based on the financial obligations of the borrower and the borrower's credit history. FICO scores are typically refreshed quarterly or more frequently. Certain borrowers (e.g., borrowers that have had debts discharged in a bankruptcy proceeding) may not have their FICO scores updated. FICO scores are also a primary credit quality indicator for the Credit Card and Other Consumer portfolio segment and the business card portfolio within U.S. small business commercial. Within the Commercial portfolio segment, loans are evaluated using the internal classifications of pass rated or reservable criticized as the primary credit quality indicators. The term reservable criticized refers to those commercial loans that are internally classified or listed by the Corporation as Special Mention, Substandard or Doubtful, which are asset quality categories defined by regulatory authorities. These assets have an elevated level of risk and may have a high probability of default or total loss. Pass rated refers to all loans not considered reservable criticized. In addition to these primary credit quality indicators, the Corporation uses other credit quality indicators for certain types of loans.

The following tables present certain credit quality indicators for the Corporation's Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments by class of financing receivables and year of origination for term loan balances at December 31, 2021, including revolving loans that converted to term loans without an additional credit decision after origination or through a TDR.

Residential Mortgage – Credit Quality Indicators By Vintage

(Dollars in millions)	Total as of December 31, 2021	Term Loans by Origination Year 2021	2020	2019	2018	2017	Prior
Total Residential Mortgage							
Refreshed LTV							
Less than or equal to 90 percent	**$ 206,562**	$ 87,051	$ 43,597	$ 23,205	$ 7,392	$ 10,956	$ 34,361
Greater than 90 percent but less than or equal to 100 percent	**1,938**	1,401	331	81	17	14	94
Greater than 100 percent	**759**	520	112	29	11	12	75
Fully-insured loans	**12,704**	3,845	3,486	1,150	216	235	3,772
Total Residential Mortgage	**$ 221,963**	$ 92,817	$ 47,526	$ 24,465	$ 7,636	$ 11,217	$ 38,302
Total Residential Mortgage							
Refreshed FICO score							
Less than 620	**$ 2,451**	$ 636	$ 442	$ 140	$ 120	$ 104	$ 1,009
Greater than or equal to 620 and less than 680	**5,199**	1,511	1,123	477	294	307	1,487
Greater than or equal to 680 and less than 740	**24,532**	8,822	5,454	2,785	1,057	1,434	4,980
Greater than or equal to 740	**177,077**	78,003	37,021	19,913	5,949	9,137	27,054
Fully-insured loans	**12,704**	3,845	3,486	1,150	216	235	3,772
Total Residential Mortgage	**$ 221,963**	$ 92,817	$ 47,526	$ 24,465	$ 7,636	$ 11,217	$ 38,302

Home Equity - Credit Quality Indicators

(Dollars in millions)	Total	Home Equity Loans and Reverse Mortgages [1]	Revolving Loans	Revolving Loans Converted to Term Loans
	December 31, 2021			
Total Home Equity				
Refreshed LTV				
Less than or equal to 90 percent	**$ 27,594**	**$ 1,773**	**$ 19,095**	**$ 6,726**
Greater than 90 percent but less than or equal to 100 percent	**130**	**55**	**34**	**41**
Greater than 100 percent	**211**	**85**	**54**	**72**
Total Home Equity	**$ 27,935**	**$ 1,913**	**$ 19,183**	**$ 6,839**
Total Home Equity				
Refreshed FICO score				
Less than 620	**$ 893**	**$ 244**	**$ 209**	**$ 440**
Greater than or equal to 620 and less than 680	**1,434**	**222**	**495**	**717**
Greater than or equal to 680 and less than 740	**4,625**	**468**	**2,493**	**1,664**
Greater than or equal to 740	**20,983**	**979**	**15,986**	**4,018**
Total Home Equity	**$ 27,935**	**$ 1,913**	**$ 19,183**	**$ 6,839**

(1) Includes reverse mortgages of $1.3 billion and home equity loans of $582 million which are no longer originated.

Credit Card and Direct/Indirect Consumer – Credit Quality Indicators By Vintage

(Dollars in millions)	Direct/Indirect: Total Direct/Indirect as of December 31, 2021	Revolving Loans	Term Loans by Origination Year: 2021	2020	2019	2018	2017	Prior	Credit Card: Total Credit Card as of December 31, 2021	Revolving Loans	Revolving Loans Converted to Term Loans [1]
Refreshed FICO score											
Less than 620	**$ 685**	$ 13	$ 179	$ 115	$ 129	$ 79	$ 101	$ 69	**$ 3,017**	$ 2,857	$ 160
Greater than or equal to 620 and less than 680	**2,313**	14	1,170	414	313	148	134	120	**9,264**	9,064	200
Greater than or equal to 680 and less than 740	**8,530**	60	4,552	1,659	1,126	466	314	353	**28,347**	28,155	192
Greater than or equal to 740	**37,164**	94	15,876	8,642	6,465	2,679	1,573	1,835	**40,810**	40,762	48
Other internal credit metrics [2,3]	**54,868**	54,173	283	53	77	75	63	144	**—**	—	—
Total credit card and other consumer	**$ 103,560**	$ 54,354	$ 22,060	$ 10,883	$ 8,110	$ 3,447	$ 2,185	$ 2,521	**$ 81,438**	$ 80,838	$ 600

(1) Represents TDRs that were modified into term loans.
(2) Other internal credit metrics may include delinquency status, geography or other factors.
(3) Direct/indirect consumer includes $54.2 billion of securities-based lending which is typically supported by highly liquid collateral with market value greater than or equal to the outstanding loan balance and therefore has minimal credit risk at December 31, 2021.

Commercial – Credit Quality Indicators By Vintage [1, 2]

(Dollars in millions)	Total as of December 31, 2021	Term Loans — Amortized Cost Basis by Origination Year: 2021	2020	2019	2018	2017	Prior	Revolving Loans
U.S. Commercial								
Risk ratings								
Pass rated	**$ 315,618**	$ 55,862	$ 25,012	$ 23,373	$ 11,439	$ 10,426	$ 23,877	$ 165,629
Reservable criticized	**10,318**	598	687	1,308	1,615	514	1,072	4,524
Total U.S. Commercial	**$ 325,936**	$ 56,460	$ 25,699	$ 24,681	$ 13,054	$ 10,940	$ 24,949	$ 170,153
Non-U.S. Commercial								
Risk ratings								
Pass rated	**$ 110,787**	$ 25,749	$ 8,703	$ 7,133	$ 4,521	$ 3,016	$ 3,062	$ 58,603
Reservable criticized	**2,479**	223	324	487	275	257	216	697
Total Non-U.S. Commercial	**$ 113,266**	$ 25,972	$ 9,027	$ 7,620	$ 4,796	$ 3,273	$ 3,278	$ 59,300
Commercial Real Estate								
Risk ratings								
Pass rated	**$ 55,511**	$ 14,402	$ 7,244	$ 11,237	$ 5,710	$ 3,326	$ 6,831	$ 6,761
Reservable criticized	**7,498**	277	990	2,237	1,710	596	1,464	224
Total Commercial Real Estate	**$ 63,009**	$ 14,679	$ 8,234	$ 13,474	$ 7,420	$ 3,922	$ 8,295	$ 6,985
Commercial Lease Financing								
Risk ratings								
Pass rated	**$ 14,438**	$ 3,280	$ 2,485	$ 2,427	$ 2,030	$ 1,741	$ 2,475	$ —
Reservable criticized	**387**	25	18	91	67	48	138	—
Total Commercial Lease Financing	**$ 14,825**	$ 3,305	$ 2,503	$ 2,518	$ 2,097	$ 1,789	$ 2,613	$ —
U.S. Small Business Commercial [3]								
Risk ratings								
Pass rated	**$ 11,618**	$ 4,257	$ 2,922	$ 1,059	$ 763	$ 623	$ 1,853	$ 141
Reservable criticized	**433**	12	29	91	87	64	147	3
Total U.S. Small Business Commercial	**$ 12,051**	$ 4,269	$ 2,951	$ 1,150	$ 850	$ 687	$ 2,000	$ 144
Total	**$ 529,087**	$ 104,685	$ 48,414	$ 49,443	$ 28,217	$ 20,611	$ 41,135	$ 236,582

(1) Excludes $7.2 billion of loans accounted for under the fair value option at December 31, 2021.
(2) Includes $16 million of loans that converted from revolving to term loans.
(3) Excludes U.S. Small Business Card loans of $7.1 billion. Refreshed FICO scores for this portfolio are $192 million for less than 620; $618 million for greater than or equal to 620 and less than 680; $1.9 billion for greater than or equal to 680 and less than 740; and $4.4 billion greater than or equal to 740.

The following tables present certain credit quality indicators for the Corporation's Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments by class of financing receivables and year of origination for term loan balances at December 31, 2020, including revolving loans that converted to term loans without an additional credit decision after origination or through a TDR.

Residential Mortgage – Credit Quality Indicators By Vintage

		Term Loans by Origination Year					
(Dollars in millions)	Total as of December 31, 2020	2020	2019	2018	2017	2016	Prior
Total Residential Mortgage							
Refreshed LTV							
Less than or equal to 90 percent	$ 207,389	$ 68,907	$ 43,771	$ 14,658	$ 21,589	$ 22,967	$ 35,497
Greater than 90 percent but less than or equal to 100 percent	3,138	1,970	684	128	70	96	190
Greater than 100 percent	1,210	702	174	47	39	37	211
Fully-insured loans	11,818	3,826	2,014	370	342	1,970	3,296
Total Residential Mortgage	$ 223,555	$ 75,405	$ 46,643	$ 15,203	$ 22,040	$ 25,070	$ 39,194
Total Residential Mortgage							
Refreshed FICO score							
Less than 620	$ 2,717	$ 823	$ 177	$ 139	$ 170	$ 150	$ 1,258
Greater than or equal to 620 and less than 680	5,462	1,804	666	468	385	368	1,771
Greater than or equal to 680 and less than 740	25,349	8,533	4,679	1,972	2,427	2,307	5,431
Greater than or equal to 740	178,209	60,419	39,107	12,254	18,716	20,275	27,438
Fully-insured loans	11,818	3,826	2,014	370	342	1,970	3,296
Total Residential Mortgage	$ 223,555	$ 75,405	$ 46,643	$ 15,203	$ 22,040	$ 25,070	$ 39,194

Home Equity - Credit Quality Indicators

(Dollars in millions)	Total	Home Equity Loans and Reverse Mortgages [1]	Revolving Loans	Revolving Loans Converted to Term Loans
	December 31, 2020			
Total Home Equity				
Refreshed LTV				
Less than or equal to 90 percent	$ 33,447	$ 1,919	$ 22,639	$ 8,889
Greater than 90 percent but less than or equal to 100 percent	351	126	94	131
Greater than 100 percent	513	172	118	223
Total Home Equity	$ 34,311	$ 2,217	$ 22,851	$ 9,243
Total Home Equity				
Refreshed FICO score				
Less than 620	$ 1,082	$ 250	$ 244	$ 588
Greater than or equal to 620 and less than 680	1,798	263	568	967
Greater than or equal to 680 and less than 740	5,762	556	2,905	2,301
Greater than or equal to 740	25,669	1,148	19,134	5,387
Total Home Equity	$ 34,311	$ 2,217	$ 22,851	$ 9,243

[1] Includes reverse mortgages of $1.3 billion and home equity loans of $885 million which are no longer originated.

Credit Card and Direct/Indirect Consumer – Credit Quality Indicators By Vintage

	Direct/Indirect								Credit Card		
			Term Loans by Origination Year								
(Dollars in millions)	Total Direct/ Indirect as of December 31, 2020	Revolving Loans	2020	2019	2018	2017	2016	Prior	Total Credit Card as of December 31, 2020	Revolving Loans	Revolving Loans Converted to Term Loans (1)
Refreshed FICO score											
Less than 620	$ 959	$ 19	$ 111	$ 200	$ 175	$ 243	$ 148	$ 63	$ 4,018	$ 3,832	$ 186
Greater than or equal to 620 and less than 680	2,143	20	653	559	329	301	176	105	9,419	9,201	218
Greater than or equal to 680 and less than 740	7,431	80	2,848	2,015	1,033	739	400	316	27,585	27,392	193
Greater than or equal to 740	36,064	120	12,540	10,588	5,869	3,495	1,781	1,671	37,686	37,642	44
Other internal credit metrics (2, 3)	44,766	44,098	74	115	84	67	52	276	—	—	—
Total credit card and other consumer	$ 91,363	$ 44,337	$ 16,226	$ 13,477	$ 7,490	$ 4,845	$ 2,557	$ 2,431	$ 78,708	$ 78,067	$ 641

(1) Represents TDRs that were modified into term loans.
(2) Other internal credit metrics may include delinquency status, geography or other factors.
(3) Direct/indirect consumer includes $44.1 billion of securities-based lending which is typically supported by highly liquid collateral with market value greater than or equal to the outstanding loan balance and therefore has minimal credit risk at December 31, 2020.

Commercial – Credit Quality Indicators By Vintage (1, 2)

		Term Loans						
		Amortized Cost Basis by Origination Year						
(Dollars in millions)	Total as of December 31, 2020	2020	2019	2018	2017	2016	Prior	Revolving Loans
U.S. Commercial								
Risk ratings								
Pass rated	$ 268,812	$ 33,456	$ 33,305	$ 17,363	$ 14,102	$ 7,420	$ 21,784	$ 141,382
Reservable criticized	19,916	2,524	2,542	2,689	854	698	1,402	9,207
Total U.S. Commercial	$ 288,728	$ 35,980	$ 35,847	$ 20,052	$ 14,956	$ 8,118	$ 23,186	$ 150,589
Non-U.S. Commercial								
Risk ratings								
Pass rated	$ 85,914	$ 16,301	$ 11,396	$ 7,451	$ 5,037	$ 1,674	$ 2,194	$ 41,861
Reservable criticized	4,546	914	572	492	436	138	259	1,735
Total Non-U.S. Commercial	$ 90,460	$ 17,215	$ 11,968	$ 7,943	$ 5,473	$ 1,812	$ 2,453	$ 43,596
Commercial Real Estate								
Risk ratings								
Pass rated	$ 50,260	$ 8,429	$ 14,126	$ 8,228	$ 4,599	$ 3,299	$ 6,542	$ 5,037
Reservable criticized	10,104	933	2,558	2,115	1,582	606	1,436	874
Total Commercial Real Estate	$ 60,364	$ 9,362	$ 16,684	$ 10,343	$ 6,181	$ 3,905	$ 7,978	$ 5,911
Commercial Lease Financing								
Risk ratings								
Pass rated	$ 16,384	$ 3,083	$ 3,242	$ 2,956	$ 2,532	$ 1,703	$ 2,868	$ —
Reservable criticized	714	117	117	132	81	88	179	—
Total Commercial Lease Financing	$ 17,098	$ 3,200	$ 3,359	$ 3,088	$ 2,613	$ 1,791	$ 3,047	$ —
U.S. Small Business Commercial (3)								
Risk ratings								
Pass rated	$ 28,786	$ 24,539	$ 1,121	$ 837	$ 735	$ 527	$ 855	$ 172
Reservable criticized	1,148	76	239	210	175	113	322	13
Total U.S. Small Business Commercial	$ 29,934	$ 24,615	$ 1,360	$ 1,047	$ 910	$ 640	$ 1,177	$ 185
Total	$ 486,584	$ 90,372	$ 69,218	$ 42,473	$ 30,133	$ 16,266	$ 37,841	$ 200,281

(1) Excludes $5.9 billion of loans accounted for under the fair value option at December 31, 2020.
(2) Includes $58 million of loans that converted from revolving to term loans.
(3) Excludes U.S. Small Business Card loans of $6.5 billion. Refreshed FICO scores for this portfolio are $265 million for less than 620; $582 million for greater than or equal to 620 and less than 680; $1.7 billion for greater than or equal to 680 and less than 740; and $3.9 billion greater than or equal to 740.

During 2021, commercial credit quality showed signs of stabilization as the economy continued to recover. Commercial reservable criticized utilized exposure decreased to $22.4 billion at December 31, 2021 from $38.7 billion (to 3.91 percent from 7.31 percent of total commercial reservable utilized exposure) at December 31, 2020, which was broad-based across industries.

Consumer Real Estate

Modifications of consumer real estate loans are classified as TDRs when the borrower is experiencing financial difficulties and a concession has been granted. Concessions may include reductions in interest rates, capitalization of past due amounts, principal and/or interest forbearance, payment extensions, principal and/or interest forgiveness, or combinations thereof. Prior to permanently modifying a loan, the Corporation may enter into trial modifications with certain borrowers under both government and proprietary programs. Trial modifications generally represent a three- to four-month period during which the borrower makes monthly payments under the anticipated modified payment terms. Upon successful completion of the trial period, the Corporation and the borrower enter into a permanent modification. Binding trial modifications are classified as TDRs when the trial offer is made and continue to be classified as TDRs regardless of whether the borrower enters into a permanent modification.

Consumer real estate loans of $306 million that have been discharged in Chapter 7 bankruptcy with no change in repayment terms and not reaffirmed by the borrower were included in TDRs at December 31, 2021, of which $87 million were classified as nonperforming and $55 million were loans fully insured.

At December 31, 2021 and 2020, remaining commitments to lend additional funds to debtors whose terms have been modified in a consumer real estate TDR were not significant. Consumer real estate foreclosed properties totaled $101 million and $123 million at December 31, 2021 and 2020. The carrying value of consumer real estate loans, including fully-insured loans, for which formal foreclosure proceedings were in process at December 31, 2021 and 2020 was $1.1 billion and $1.2 billion. During 2021 and 2020, the Corporation reclassified $64 million and $182 million of consumer real estate loans, to foreclosed properties or, for properties acquired upon foreclosure of certain government-guaranteed loans (principally FHA-insured loans), to other assets. The reclassifications represent non-cash investing activities and, accordingly, are not reflected in the Consolidated Statement of Cash Flows.

The table below presents the December 31, 2021, 2020 and 2019 unpaid principal balance, carrying value, and average pre- and post-modification interest rates of consumer real estate loans that were modified in TDRs during 2021, 2020 and 2019. The following Consumer Real Estate portfolio segment tables include loans that were initially classified as TDRs during the period and also loans that had previously been classified as TDRs and were modified again during the period.

Consumer Real Estate – TDRs Entered into During 2021, 2020 and 2019

(Dollars in millions)	Unpaid Principal Balance	Carrying Value	Pre-Modification Interest Rate	Post-Modification Interest Rate [(1)]
	December 31, 2021			
Residential mortgage	**$ 891**	**$ 788**	**3.48 %**	**3.38 %**
Home equity	**107**	**77**	**3.60**	**3.59**
Total	**$ 998**	**$ 865**	**3.49**	**3.41**
	December 31, 2020			
Residential mortgage	$ 732	$ 646	3.66 %	3.59 %
Home equity	87	69	3.67	3.61
Total	$ 819	$ 715	3.66	3.59
	December 31, 2019			
Residential mortgage	$ 464	$ 377	4.19 %	4.13 %
Home equity	141	101	5.04	4.31
Total	$ 605	$ 478	4.39	4.17

(1) The post-modification interest rate reflects the interest rate applicable only to permanently completed modifications, which exclude loans that are in a trial modification period.

The table below presents the December 31, 2021, 2020 and 2019 carrying value for consumer real estate loans that were modified in a TDR during 2021, 2020 and 2019, by type of modification.

Consumer Real Estate – Modification Programs

	TDRs Entered into During		
(Dollars in millions)	**2021**	2020	2019
Modifications under government programs	**$ 4**	$ 13	$ 35
Modifications under proprietary programs	**774**	570	174
Loans discharged in Chapter 7 bankruptcy [(1)]	**33**	53	68
Trial modifications	**54**	79	201
Total modifications	**$ 865**	$ 715	$ 478

(1) Includes loans discharged in Chapter 7 bankruptcy with no change in repayment terms that are classified as TDRs.

The table below presents the carrying value of consumer real estate loans that entered into payment default during 2021, 2020 and 2019 that were modified in a TDR during the 12 months preceding payment default. A payment default for consumer real estate TDRs is recognized when a borrower has missed three monthly payments (not necessarily consecutively) since modification.

Consumer Real Estate – TDRs Entering Payment Default that were Modified During the Preceding 12 Months

(Dollars in millions)	**2021**	2020	2019
Modifications under government programs	**$ 4**	$ 16	$ 26
Modifications under proprietary programs	**128**	51	88
Loans discharged in Chapter 7 bankruptcy [(1)]	**9**	19	30
Trial modifications [(2)]	**19**	54	57
Total modifications	**$ 160**	$ 140	$ 201

(1) Includes loans discharged in Chapter 7 bankruptcy with no change in repayment terms that are classified as TDRs.
(2) Includes trial modification offers to which the customer did not respond.

Credit Card and Other Consumer

The Corporation seeks to assist customers who are experiencing financial difficulty by modifying loans while ensuring compliance with federal and local laws and guidelines. Credit card and other consumer loan modifications generally involve reducing the interest rate on the account, placing the customer on a fixed payment plan not exceeding 60 months and canceling the customer's available line of credit, all of which are considered TDRs. The Corporation makes loan modifications directly with borrowers for debt held only by the Corporation (internal programs). Additionally, the Corporation makes loan modifications for borrowers working with third-party renegotiation agencies that provide solutions to customers' entire unsecured debt structures (external programs). The Corporation classifies other secured consumer loans that have been discharged in Chapter 7 bankruptcy as TDRs, which are written down to collateral value and placed on nonaccrual status no later than the time of discharge.

The table below provides information on the Corporation's Credit Card and Other Consumer TDR portfolio including the December 31, 2021, 2020 and 2019 unpaid principal balance, carrying value, and average pre- and post-modification interest rates of loans that were modified in TDRs during 2021, 2020 and 2019.

Credit Card and Other Consumer – TDRs Entered into During 2021, 2020 and 2019

(Dollars in millions)	Unpaid Principal Balance	Carrying Value [(1)]	Pre-Modification Interest Rate	Post-Modification Interest Rate
	December 31, 2021			
Credit card	**$ 237**	**$ 248**	**18.45 %**	**4.09 %**
Direct/Indirect consumer	**23**	**16**	**5.88**	**5.88**
Total	**$ 260**	**$ 264**	**17.68**	**4.20**
	December 31, 2020			
Credit card	$ 269	$ 277	18.16 %	5.63 %
Direct/Indirect consumer	52	37	5.83	5.83
Total	$ 321	$ 314	16.70	5.65
	December 31, 2019			
Credit card	$ 340	$ 355	19.18 %	5.35 %
Direct/Indirect consumer	40	21	5.23	5.21
Total	$ 380	$ 376	18.42	5.34

(1) Includes accrued interest and fees.

The table below presents the December 31, 2021, 2020 and 2019 carrying value for Credit Card and Other Consumer loans that were modified in a TDR during 2021, 2020 and 2019, by program type.

Credit Card and Other Consumer – TDRs by Program Type at December 31 [(1)]

(Dollars in millions)	**2021**	2020	2019
Internal programs	**$ 214**	$ 225	$ 247
External programs	**44**	73	108
Other	**6**	16	21
Total	**$ 264**	$ 314	$ 376

(1) Includes accrued interest and fees.

Credit card and other consumer loans are deemed to be in payment default during the quarter in which a borrower misses the second of two consecutive payments. Payment defaults are one of the factors considered when projecting future cash flows in the calculation of the allowance for loan and lease losses for credit card and other consumer. Based on historical experience, the Corporation estimates that 10 percent of new credit card TDRs and 18 percent of new direct/indirect consumer TDRs may be in payment default within 12 months after modification.

Commercial Loans

Modifications of loans to commercial borrowers that are experiencing financial difficulty are designed to reduce the Corporation's loss exposure while providing the borrower with an opportunity to work through financial difficulties, often to avoid foreclosure or bankruptcy. Each modification is unique and reflects the individual circumstances of the borrower. Modifications that result in a TDR may include extensions of maturity at a concessionary (below market) rate of interest, payment forbearances or other actions designed to benefit the borrower while mitigating the Corporation's risk exposure. Reductions in interest rates are rare. Instead, the interest rates are typically increased, although the increased rate may not represent a market rate of interest. Infrequently, concessions may also include principal forgiveness in connection with foreclosure, short sale or other settlement agreements leading to termination or sale of the loan.

At the time of restructuring, the loans are remeasured to reflect the impact, if any, on projected cash flows resulting from the modified terms. If a portion of the loan is deemed to be uncollectible, a charge-off may be recorded at the time of restructuring. Alternatively, a charge-off may have already been recorded in a previous period such that no charge-off is required at the time of modification.

During 2021, the carrying value of the Corporation's commercial loans that were modified as TDRs was $1.3 billion compared to $1.2 billion and $1.7 billion for 2020 and 2019. At December 31, 2021, 2020 and 2019, the Corporation had commitments to lend $283 million, $402 million and $445 million to commercial borrowers whose loans were classified as TDRs. The balance of commercial TDRs in payment default was $262 million, $218 million and $207 million at December 31, 2021, 2020 and 2019.

Loans Held-for-sale

The Corporation had LHFS of $15.6 billion and $9.2 billion at December 31, 2021 and 2020. Cash and non-cash proceeds from sales and paydowns of loans originally classified as LHFS were $43.6 billion, $20.1 billion and $30.6 billion for 2021, 2020 and 2019, respectively. Cash used for originations and purchases of LHFS totaled $37.3 billion, $19.7 billion and $28.9 billion for 2021, 2020 and 2019, respectively.

Accrued Interest Receivable

Accrued interest receivable for loans and leases and loans held-for-sale at December 31, 2021 and 2020 was $2.2 billion and $2.4 billion and is reported in customer and other receivables on the Consolidated Balance Sheet.

Outstanding credit card loan balances include unpaid principal, interest and fees. Credit card loans are not classified as nonperforming but are charged off no later than the end of the month in which the account becomes 180 days past due, within 60 days after receipt of notification of death or bankruptcy, or upon confirmation of fraud. During 2021 and 2020, the Corporation reversed $446 million and $512 million of interest and fee income against the income statement line item in which it was originally recorded upon charge-off of the principal balance of the loan.

For the outstanding residential mortgage, home equity, direct/indirect consumer and commercial loan balances classified as nonperforming during 2021 and 2020, interest and fee income reversed at the time the loans were classified as nonperforming was not significant. For more information on the Corporation's nonperforming loan policies, see *Note 1 – Summary of Significant Accounting Principles*.

Allowance for Credit Losses

On January 1, 2020, the Corporation adopted the new accounting standard that requires the measurement of the allowance for credit losses to be based on management's best estimate of lifetime ECL inherent in the Corporation's relevant financial assets. Upon adoption of the new accounting standard, the Corporation recorded a $3.3 billion, or 32 percent, increase in the allowance for credit losses on January 1, 2020, which was comprised of a net increase of $2.9 billion in the allowance for loan and lease losses and a $310 million increase in the reserve for unfunded lending commitments. The net increase in the allowance for loan and lease losses was primarily driven by a $3.1 billion increase in credit card as the Corporation now reserves for the life of these receivables. The increase in the reserve for unfunded lending commitments included $119 million in the consumer portfolio for the undrawn portion of HELOCs and $191 million in the commercial portfolio. For more information on the Corporation's credit loss accounting policies including the allowance for credit losses see *Note 1 – Summary of Significant Accounting Principles*.

The allowance for credit losses is estimated using quantitative and qualitative methods that consider a variety of factors, such as historical loss experience, the current credit quality of the portfolio and an economic outlook over the life of the loan. Qualitative reserves cover losses that are expected but, in the Corporation's assessment, may not be adequately reflected in the quantitative methods or the economic assumptions. The Corporation incorporates forward-looking information through the use of several macroeconomic scenarios in determining the weighted economic outlook over the forecasted life of the assets. These scenarios include key macroeconomic variables such as gross domestic product, unemployment rate, real estate prices and corporate bond spreads. The scenarios that are chosen each quarter and the weighting given to each scenario depend on a variety of factors including recent economic events, leading economic indicators, internal and third-party economist views, and industry trends.

The December 31, 2021 estimate for allowance for credit losses was based on various economic outlooks that included a baseline scenario, which is derived from consensus estimates, a downside scenario that assumed a significantly longer period until full economic recovery, a tail risk scenario similar to the severely adverse scenario used in stress testing, a scenario to account for inflationary risk and higher interest rates and an upside scenario to consider the potential for improvement in the consensus outlooks. The weighted economic outlook assumes that the U.S. average unemployment rate will be just above five percent by the fourth quarter of 2022 and slowly declines to just under five percent by the fourth quarter of 2023. Additionally, in this economic outlook, U.S. gross domestic product is forecasted to grow at 2.1 percent and 1.9 percent year-over-year in the fourth quarters of 2022 and 2023. For comparison, as of December 31, 2020, the weighted macroeconomic outlook for the U.S. average unemployment rate was forecasted at 6.6 percent, 5.5 percent and 5.0 percent in the fourth quarters of 2021, 2022 and 2023, respectively, and the weighted macroeconomic outlook for U.S. GDP was forecasted to grow at 2.5 percent, 2.4 percent and 2.1 percent year-over-year in the fourth quarters of 2021, 2022 and 2023, respectively. The allowance for credit losses considered the impact of enacted government stimulus measures and continued to factor in the uncertainty resulting from the unprecedented nature of the current public health crisis and risks that may prevent a full economic recovery.

While there has been improvement across the U.S. economy, the Corporation continues to factor into its allowance for credit losses an estimated impact from higher-risk segments that included leveraged loans and industries such as travel and entertainment, which have been adversely impacted by the effects of the pandemic.

The allowance for credit losses at December 31, 2021 was $13.8 billion, a decrease of $6.8 billion compared to December 31, 2020. The decrease in the allowance for credit losses was primarily driven by improvements in the macroeconomic outlook and credit quality. The change in the allowance for credit losses was comprised of a net decrease of $6.4 billion in the allowance for loan and lease losses and a $422 million decrease in the reserve for unfunded lending commitments. The decrease in the allowance for credit losses was attributed to $342 million in the consumer real estate portfolio, $2.7 billion in the credit card and other consumer portfolio, and $3.8 billion in the commercial portfolio. Similarly, the provision for credit losses improved $15.9 billion to a benefit of $4.6 billion in 2021 compared to provision expense of $11.3 billion and $3.6 billion in 2020 and 2019. The benefit in 2021 was primarily driven by improvements in the macroeconomic outlook and credit quality.

Outstanding loans and leases excluding loans accounted for under the fair value option increased $50.1 billion in 2021 driven by commercial loans, which increased $60.4 billion, excluding small business, primarily driven by *Global Markets*. Consumer loans increased $7.0 billion primarily driven by securities-based lending, partially offset by lower consumer real estate due to prepayments in a low rate environment.

The changes in the allowance for credit losses, including net charge-offs and provision for loan and lease losses, are detailed in the following table.

(Dollars in millions)	Consumer Real Estate	Credit Card and Other Consumer	Commercial	Total
	2021			
Allowance for loan and lease losses, January 1	**$ 858**	**$ 9,213**	**$ 8,731**	**$ 18,802**
Loans and leases charged off	**(78)**	**(3,000)**	**(719)**	**(3,797)**
Recoveries of loans and leases previously charged off	**225**	**1,006**	**323**	**1,554**
Net charge-offs	**147**	**(1,994)**	**(396)**	**(2,243)**
Provision for loan and lease losses	**(449)**	**(744)**	**(2,980)**	**(4,173)**
Other	**1**	**1**	**(1)**	**1**
Allowance for loan and lease losses, December 31	**557**	**6,476**	**5,354**	**12,387**
Reserve for unfunded lending commitments, January 1	**137**	**—**	**1,741**	**1,878**
Provision for unfunded lending commitments	**(41)**	**—**	**(380)**	**(421)**
Other	**—**	**—**	**(1)**	**(1)**
Reserve for unfunded lending commitments, December 31	**96**	**—**	**1,360**	**1,456**
Allowance for credit losses, December 31	**$ 653**	**$ 6,476**	**$ 6,714**	**$ 13,843**
	2020			
Allowance for loan and lease losses, January 1	$ 440	$ 7,430	$ 4,488	$ 12,358
Loans and leases charged off	(98)	(3,646)	(1,675)	(5,419)
Recoveries of loans and leases previously charged off	201	891	206	1,298
Net charge-offs	103	(2,755)	(1,469)	(4,121)
Provision for loan and lease losses	307	4,538	5,720	10,565
Other	8	—	(8)	—
Allowance for loan and lease losses, December 31	858	9,213	8,731	18,802
Reserve for unfunded lending commitments, January 1	119	—	1,004	1,123
Provision for unfunded lending commitments	18	—	737	755
Reserve for unfunded lending commitments, December 31	137	—	1,741	1,878
Allowance for credit losses, December 31	$ 995	$ 9,213	$ 10,472	$ 20,680
	2019			
Allowance for loan and lease losses, January 1	$ 928	$ 3,874	$ 4,799	$ 9,601
Loans and leases charged off	(522)	(4,302)	(822)	(5,646)
Recoveries of loans and leases previously charged off	927	911	160	1,998
Net charge-offs	405	(3,391)	(662)	(3,648)
Provision for loan and lease losses	(680)	3,512	742	3,574
Other [1]	(107)	1	(5)	(111)
Allowance for loan and lease losses, December 31	546	3,996	4,874	9,416
Reserve for unfunded lending commitments, January 1	—	—	797	797
Provision for unfunded lending commitments	—	—	16	16
Reserve for unfunded lending commitments, December 31	—	—	813	813
Allowance for credit losses, December 31	$ 546	$ 3,996	$ 5,687	$ 10,229

(1) Primarily represents write-offs of purchased credit-impaired loans in 2019.

NOTE 6 Securitizations and Other Variable Interest Entities

The Corporation utilizes VIEs in the ordinary course of business to support its own and its customers' financing and investing needs. The Corporation routinely securitizes loans and debt securities using VIEs as a source of funding for the Corporation and as a means of transferring the economic risk of the loans or debt securities to third parties. The assets are transferred into a trust or other securitization vehicle such that the assets are legally isolated from the creditors of the Corporation and are not available to satisfy its obligations. These assets can only be used to settle obligations of the trust or other securitization vehicle. The Corporation also administers, structures or invests in other VIEs including CDOs, investment vehicles and other entities. For more information on the Corporation's use of VIEs, see *Note 1 – Summary of Significant Accounting Principles.*

The tables in this Note present the assets and liabilities of consolidated and unconsolidated VIEs at December 31, 2021 and 2020 in situations where the Corporation has continuing involvement with transferred assets or if the Corporation otherwise has a variable interest in the VIE. The tables also present the Corporation's maximum loss exposure at December 31, 2021 and 2020 resulting from its involvement with consolidated VIEs and unconsolidated VIEs in which the Corporation holds a variable interest. The Corporation's maximum loss exposure is based on the unlikely event that all of the assets in the VIEs become worthless and incorporates not only potential losses associated with assets recorded on the Consolidated Balance Sheet but also potential losses associated with off-balance sheet commitments, such as unfunded liquidity commitments and other contractual arrangements. The Corporation's maximum loss exposure does not include losses previously recognized through write-downs of assets.

The Corporation invests in ABS issued by third-party VIEs with which it has no other form of involvement and enters into certain commercial lending arrangements that may also incorporate the use of VIEs, for example to hold collateral. These securities and loans are included in *Note 4 – Securities* or *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses.* In addition, the Corporation has used VIEs in connection with its funding activities.

The Corporation did not provide financial support to consolidated or unconsolidated VIEs during 2021, 2020 and 2019 that it was not previously contractually required to provide, nor does it intend to do so.

The Corporation had liquidity commitments, including written put options and collateral value guarantees, with certain unconsolidated VIEs of $968 million and $929 million at December 31, 2021 and 2020.

First-lien Mortgage Securitizations

As part of its mortgage banking activities, the Corporation securitizes a portion of the first-lien residential mortgage loans it originates or purchases from third parties, generally in the form of residential mortgage-backed securities (RMBS) guaranteed by government-sponsored enterprises, FNMA and FHLMC (collectively the GSEs), or the Government National Mortgage Association (GNMA) primarily in the case of FHA-insured and U.S. Department of Veterans Affairs (VA)-guaranteed mortgage loans. Securitization usually occurs in conjunction with or shortly after origination or purchase, and the Corporation may also securitize loans held in its residential mortgage portfolio. In addition, the Corporation may, from time to time, securitize commercial mortgages it originates or purchases from other entities. The Corporation typically services the loans it securitizes. Further, the Corporation may retain beneficial interests in the securitization trusts including senior and subordinate securities and equity tranches issued by the trusts. Except as described in *Note 12 – Commitments and Contingencies*, the Corporation does not provide guarantees or recourse to the securitization trusts other than standard representations and warranties.

The table below summarizes select information related to first-lien mortgage securitizations for 2021, 2020 and 2019.

First-lien Mortgage Securitizations

	Residential Mortgage - Agency			Commercial Mortgage		
(Dollars in millions)	**2021**	2020	2019	**2021**	2020	2019
Proceeds from loan sales [1]	**$ 6,664**	$ 15,823	$ 6,858	**$ 10,874**	$ 5,084	$ 8,661
Gains on securitizations [2]	**9**	728	27	**156**	61	103
Repurchases from securitization trusts [3]	**756**	436	881	**—**	—	—

(1) The Corporation transfers residential mortgage loans to securitizations sponsored primarily by the GSEs or GNMA in the normal course of business and primarily receives RMBS in exchange. Substantially all of these securities are classified as Level 2 within the fair value hierarchy and are typically sold shortly after receipt.

(2) A majority of the first-lien residential mortgage loans securitized are initially classified as LHFS and accounted for under the fair value option. Gains recognized on these LHFS prior to securitization, which totaled $121 million, $160 million and $64 million net of hedges, during 2021, 2020 and 2019, respectively, are not included in the table above.

(3) The Corporation may have the option to repurchase delinquent loans out of securitization trusts, which reduces the amount of servicing advances it is required to make. The Corporation may also repurchase loans from securitization trusts to perform modifications. Repurchased loans include FHA-insured mortgages collateralizing GNMA securities.

The Corporation recognizes consumer MSRs from the sale or securitization of consumer real estate loans. The unpaid principal balance of loans serviced for investors, including residential mortgage and home equity loans, totaled $115.4 billion and $160.4 billion at December 31, 2021 and 2020. Servicing fee and ancillary fee income on serviced loans was $392 million, $474 million and $585 million during 2021, 2020 and 2019, respectively. Servicing advances on serviced loans, including loans serviced for others and loans held for investment, were $2.0 billion and $2.2 billion at December 31, 2021 and 2020. For more information on MSRs, see *Note 20 – Fair Value Measurements*.

During 2020, the Corporation completed the sale of $9.3 billion of consumer real estate loans through GNMA loan securitizations. As part of the securitizations, the Corporation retained $8.4 billion of MBS, which are classified as debt securities carried at fair value on the Consolidated Balance Sheet. Total gains on loan sales of $704 million were recorded in other income in the Consolidated Statement of Income.

The following table summarizes select information related to first-lien mortgage securitization trusts in which the Corporation held a variable interest at December 31, 2021 and 2020.

First-lien Mortgage VIEs

	Residential Mortgage									
			Non-agency							
	Agency		Prime		Subprime		Alt-A		Commercial Mortgage	
	December 31									
(Dollars in millions)	**2021**	2020	**2021**	2020	**2021**	2020	**2021**	2020	**2021**	2020
Unconsolidated VIEs										
Maximum loss exposure [(1)]	**$ 11,600**	$ 13,477	**$ 121**	$ 250	**$ 908**	$ 1,031	**$ 14**	$ 46	**$ 1,445**	$ 1,169
On-balance sheet assets										
Senior securities:										
Trading account assets	**$ 175**	$ 152	**$ 8**	$ 2	**$ 44**	$ 8	**$ 12**	$ 12	**$ 21**	$ 60
Debt securities carried at fair value	**5,009**	7,588	**—**	103	**537**	676	**—**	33	**—**	—
Held-to-maturity securities	**6,416**	5,737	**—**	—	**—**	—	**—**	—	**1,157**	925
All other assets	**—**	—	**3**	6	**29**	26	**2**	1	**93**	50
Total retained positions	**$ 11,600**	$ 13,477	**$ 11**	$ 111	**$ 610**	$ 710	**$ 14**	$ 46	**$ 1,271**	$ 1,035
Principal balance outstanding [(2)]	**$ 93,142**	$ 133,497	**$ 4,710**	$ 6,081	**$ 6,179**	$ 6,691	**$ 13,627**	$ 16,554	**$ 85,540**	$ 59,268
Consolidated VIEs										
Maximum loss exposure [(1)]	**$ 1,644**	$ 1,328	**$ 49**	$ 66	**$ —**	$ 53	**$ —**	$ —	**$ —**	$ —
On-balance sheet assets										
Trading account assets	**$ 1,644**	$ 1,328	**$ —**	$ 350	**$ —**	$ 260	**$ —**	$ —	**$ —**	$ —
Loans and leases, net	**—**	—	**58**	—	**—**	—	**—**	—	**—**	—
Total assets	**$ 1,644**	$ 1,328	**$ 58**	$ 350	**$ —**	$ 260	**$ —**	$ —	**$ —**	$ —
Total liabilities	**$ —**	$ —	**$ 9**	$ 284	**$ —**	$ 207	**$ —**	$ —	**$ —**	$ —

(1) Maximum loss exposure includes obligations under loss-sharing reinsurance and other arrangements for non-agency residential mortgage and commercial mortgage securitizations, but excludes the reserve for representations and warranties obligations and corporate guarantees and also excludes servicing advances and other servicing rights and obligations. For more information, see *Note 12 – Commitments and Contingencies* and *Note 20 – Fair Value Measurements*.
(2) Principal balance outstanding includes loans where the Corporation was the transferor to securitization VIEs with which it has continuing involvement, which may include servicing the loans.

Other Asset-backed Securitizations

The table below summarizes select information related to home equity, credit card and other asset-backed VIEs in which the Corporation held a variable interest at December 31, 2021 and 2020.

Home Equity Loan, Credit Card and Other Asset-backed VIEs

	Home Equity [(1)]		Credit Card [(2)]		Resecuritization Trusts		Municipal Bond Trusts	
	December 31							
(Dollars in millions)	**2021**	2020	**2021**	2020	**2021**	2020	**2021**	2020
Unconsolidated VIEs								
Maximum loss exposure	**$ 152**	$ 206	**$ —**	$ —	**$ 6,089**	$ 8,543	**$ 4,094**	$ 3,507
On-balance sheet assets								
Securities [(3)]:								
Trading account assets	**$ —**	$ —	**$ —**	$ —	**$ 1,030**	$ 948	**$ —**	$ —
Debt securities carried at fair value	**1**	2	**—**	—	**1,903**	2,727	**—**	—
Held-to-maturity securities	**—**	—	**—**	—	**3,156**	4,868	**—**	—
Total retained positions	**$ 1**	$ 2	**$ —**	$ —	**$ 6,089**	$ 8,543	**$ —**	$ —
Total assets of VIEs	**$ 430**	$ 609	**$ —**	$ —	**$ 18,633**	$ 17,250	**$ 4,655**	$ 4,042
Consolidated VIEs								
Maximum loss exposure	**$ 45**	$ 58	**$ 10,279**	$ 14,606	**$ 680**	$ 217	**$ 210**	$ 1,030
On-balance sheet assets								
Trading account assets	**$ —**	$ —	**$ —**	$ —	**$ 686**	$ 217	**$ 122**	$ 990
Loans and leases	**140**	218	**14,434**	21,310	**—**	—	**—**	—
Allowance for loan and lease losses	**14**	14	**(970)**	(1,704)	**—**	—	**—**	—
All other assets	**3**	4	**70**	1,289	**—**	—	**88**	40
Total assets	**$ 157**	$ 236	**$ 13,534**	$ 20,895	**$ 686**	$ 217	**$ 210**	$ 1,030
On-balance sheet liabilities								
Short-term borrowings	**$ —**	$ —	**$ —**	$ —	**$ —**	$ —	**$ 196**	$ 432
Long-term debt	**113**	178	**3,248**	6,273	**6**	—	**—**	—
All other liabilities	**—**	—	**7**	16	**—**	—	**—**	—
Total liabilities	**$ 113**	$ 178	**$ 3,255**	$ 6,289	**$ 6**	$ —	**$ 196**	$ 432

(1) For unconsolidated home equity loan VIEs, the maximum loss exposure includes outstanding trust certificates issued by trusts in rapid amortization, net of recorded reserves. For both consolidated and unconsolidated home equity loan VIEs, the maximum loss exposure excludes the reserve for representations and warranties obligations and corporate guarantees. For more information, see *Note 12 – Commitments and Contingencies*.
(2) At December 31, 2021 and 2020, loans and leases in the consolidated credit card trust included $4.3 billion and $7.6 billion of seller's interest.
(3) The retained senior securities were valued using quoted market prices or observable market inputs (Level 2 of the fair value hierarchy).

Home Equity Loans

The Corporation retains interests, primarily senior securities, in home equity securitization trusts to which it transferred home equity loans. In addition, the Corporation may be obligated to provide subordinate funding to the trusts during a rapid amortization event. This obligation is included in the maximum loss exposure in the table above. The charges that will ultimately be recorded as a result of the rapid amortization events depend on the undrawn portion of the home equity lines of credit, performance of the loans, the amount of subsequent draws and the timing of related cash flows.

Credit Card Securitizations

The Corporation securitizes originated and purchased credit card loans. The Corporation's continuing involvement with the securitization trust includes servicing the receivables, retaining an undivided interest (seller's interest) in the receivables, and holding certain retained interests, including subordinate interests in accrued interest and fees on the securitized receivables and cash reserve accounts.

During 2021, 2020 and 2019, the Corporation issued new senior debt securities issued to third-party investors from the credit card securitization trust of $1.0 billion, $1.0 billion and $1.3 billion, respectively.

At December 31, 2021 and 2020, the Corporation held subordinate securities issued by the credit card securitization trust with a notional principal amount of $6.5 billion and $6.8 billion. These securities serve as a form of credit enhancement to the senior debt securities and have a stated interest rate of zero percent. During 2021, 2020 and 2019, the credit card securitization trust issued $161 million, $161 million and $202 million, respectively, of these subordinate securities.

Resecuritization Trusts

The Corporation transfers securities, typically MBS, into resecuritization VIEs generally at the request of customers seeking securities with specific characteristics. Generally, there are no significant ongoing activities performed in a resecuritization trust, and no single investor has the unilateral ability to liquidate the trust.

The Corporation resecuritized $28.9 billion, $39.0 billion and $24.4 billion of securities during 2021, 2020 and 2019, respectively. Securities transferred into resecuritization VIEs were measured at fair value with changes in fair value recorded in market making and similar activities prior to the resecuritization and, accordingly, no gain or loss on sale was recorded. Securities received from the resecuritization VIEs were recognized at their fair value of $2.2 billion, $6.1 billion and $5.2 billion during 2021, 2020 and 2019, respectively. In 2021 and 2019, substantially all of the securities were classified as trading account assets. All of the securities received as resecuritization proceeds during 2020 were classified as trading account assets. Of the securities received as resecuritization proceeds during 2020, $2.4 billion, $2.1 billion and $1.7 billion were classified as trading account assets, debt securities carried at fair value and HTM securities, respectively. Substantially all of the trading account securities carried at fair value were categorized as Level 2 within the fair value hierarchy.

Municipal Bond Trusts

The Corporation administers municipal bond trusts that hold highly-rated, long-term, fixed-rate municipal bonds. The trusts obtain financing by issuing floating-rate trust certificates that reprice on a weekly or other short-term basis to third-party investors.

The Corporation's liquidity commitments to unconsolidated municipal bond trusts, including those for which the Corporation was transferor, totaled $4.1 billion and $3.5 billion at December 31, 2021 and 2020. The weighted-average remaining life of bonds held in the trusts at December 31, 2021 was 6.3 years. There were no significant write-downs or downgrades of assets or issuers during 2021, 2020 and 2019.

Other Variable Interest Entities

The table below summarizes select information related to other VIEs in which the Corporation held a variable interest at December 31, 2021 and 2020.

Other VIEs

	Consolidated	Unconsolidated	Total	Consolidated	Unconsolidated	Total
(Dollars in millions)	December 31, 2021			December 31, 2020		
Maximum loss exposure	**$ 4,819**	**$ 27,790**	**$ 32,609**	$ 4,106	$ 23,870	$ 27,976
On-balance sheet assets						
Trading account assets	**$ 2,552**	**$ 626**	**$ 3,178**	$ 2,080	$ 623	$ 2,703
Debt securities carried at fair value	**—**	**7**	**7**	—	9	9
Loans and leases	**2,503**	**47**	**2,550**	2,108	184	2,292
Allowance for loan and lease losses	**(2)**	**(12)**	**(14)**	(3)	(3)	(6)
All other assets	**28**	**26,628**	**26,656**	54	22,553	22,607
Total	**$ 5,081**	**$ 27,296**	**$ 32,377**	$ 4,239	$ 23,366	$ 27,605
On-balance sheet liabilities						
Short-term borrowings	**$ 51**	**$ —**	**$ 51**	$ 22	$ —	$ 22
Long-term debt	**211**	**—**	**211**	111	—	111
All other liabilities	**—**	**6,548**	**6,548**	—	5,658	5,658
Total	**$ 262**	**$ 6,548**	**$ 6,810**	$ 133	$ 5,658	$ 5,791
Total assets of VIEs	**$ 5,081**	**$ 92,249**	**$ 97,330**	$ 4,239	$ 77,984	$ 82,223

Customer VIEs

Customer VIEs include credit-linked, equity-linked and commodity-linked note VIEs, repackaging VIEs and asset acquisition VIEs, which are typically created on behalf of customers who wish to obtain market or credit exposure to a specific company, index, commodity or financial instrument.

The Corporation's maximum loss exposure to consolidated and unconsolidated customer VIEs totaled $2.9 billion and $2.3 billion at December 31, 2021 and 2020, including the notional amount of derivatives to which the Corporation is a counterparty, net of losses previously recorded, and the Corporation's investment, if any, in securities issued by the VIEs.

Collateralized Debt Obligation VIEs

The Corporation receives fees for structuring CDO VIEs, which hold diversified pools of fixed-income securities, typically corporate debt or ABS, which the CDO VIEs fund by issuing multiple tranches of debt and equity securities. CDOs are generally managed by third-party portfolio managers. The Corporation typically transfers assets to these CDOs, holds securities issued by the CDOs and may be a derivative counterparty to the CDOs. The Corporation's maximum loss exposure to consolidated and unconsolidated CDOs totaled $235 million and $298 million at December 31, 2021 and 2020.

Investment VIEs

The Corporation sponsors, invests in or provides financing, which may be in connection with the sale of assets, to a variety of investment VIEs that hold loans, real estate, debt securities or other financial instruments and are designed to provide the desired investment profile to investors or the Corporation. At December 31, 2021 and 2020, the Corporation's consolidated investment VIEs had total assets of $1.0 billion and $494 million. The Corporation also held investments in unconsolidated VIEs with total assets of $7.1 billion and $5.4 billion at December 31, 2021 and 2020. The Corporation's maximum loss exposure associated with both consolidated and unconsolidated investment VIEs totaled $2.0 billion and $1.5 billion at December 31, 2021 and 2020 comprised primarily of on-balance sheet assets less non-recourse liabilities.

Leveraged Lease Trusts

The Corporation's net investment in consolidated leveraged lease trusts totaled $1.5 billion and $1.7 billion at December 31, 2021 and 2020. The trusts hold long-lived equipment such as rail cars, power generation and distribution equipment, and commercial aircraft. The Corporation structures the trusts and holds a significant residual interest. The net investment represents the Corporation's maximum loss exposure to the trusts in the unlikely event that the leveraged lease investments become worthless. Debt issued by the leveraged lease trusts is non-recourse to the Corporation.

Tax Credit VIEs

The Corporation holds investments in unconsolidated limited partnerships and similar entities that construct, own and operate affordable housing, wind and solar projects. An unrelated third party is typically the general partner or managing member and has control over the significant activities of the VIE. The Corporation earns a return primarily through the receipt of tax credits allocated to the projects. The maximum loss exposure included in the Other VIEs table was $25.7 billion and $22.0 billion at December 31, 2021 and 2020. The Corporation's risk of loss is generally mitigated by policies requiring that the project qualify for the expected tax credits prior to making its investment.

The Corporation's investments in affordable housing partnerships, which are reported in other assets on the Consolidated Balance Sheet, totaled $12.6 billion and $11.2 billion, including unfunded commitments to provide capital contributions of $5.8 billion and $5.0 billion, at December 31, 2021 and 2020. The unfunded commitments are expected to be paid over the next five years. During 2021, 2020 and 2019, the Corporation recognized tax credits and other tax benefits from investments in affordable housing partnerships of $1.3 billion, $1.2 billion and $1.0 billion and reported pretax losses in other income of $1.1 billion, $1.0 billion and $882 million, respectively. These tax credits are recognized as part of the Corporation's annual effective tax rate used to determine tax expense in a given quarter. The Corporation may be asked to invest additional amounts to support a troubled affordable housing project. Such additional investments have not been and are not expected to be significant.

NOTE 7 Goodwill and Intangible Assets

Goodwill

The table below presents goodwill balances by business segment at December 31, 2021 and 2020. The reporting units utilized for goodwill impairment testing are the operating segments or one level below.

Goodwill

	December 31	
(Dollars in millions)	**2021**	2020
Consumer Banking	**$ 30,137**	$ 30,123
Global Wealth & Investment Management	**9,677**	9,677
Global Banking [1]	**24,026**	23,969
Global Markets	**5,182**	5,182
Total goodwill	**$ 69,022**	$ 68,951

[1] Prior period has been revised to conform to current-period presentation.

During 2021, the Corporation completed its annual goodwill impairment test as of June 30, 2021 using qualitative assessments for all applicable reporting units. Based on the results of the annual goodwill impairment test, the Corporation determined there was no impairment. For more information on the use of qualitative assessments, see *Note 1 – Summary of Significant Accounting Principles.*

Intangible Assets

At both December 31, 2021 and 2020, the net carrying value of intangible assets was $2.2 billion. At both December 31, 2021 and 2020, intangible assets included $1.6 billion of intangible assets associated with trade names, substantially all of which had an indefinite life and, accordingly, are not being amortized. Amortization of intangibles expense was $76 million, $95 million and $112 million for 2021, 2020 and 2019.

NOTE 8 Leases

The Corporation enters into both lessor and lessee arrangements. For more information on lease accounting, see *Note 1 – Summary of Significant Accounting Principles* and on lease financing receivables, see *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses*.

Lessor Arrangements

The Corporation's lessor arrangements primarily consist of operating, sales-type and direct financing leases for equipment. Lease agreements may include options to renew and for the lessee to purchase the leased equipment at the end of the lease term.

The table below presents the net investment in sales-type and direct financing leases at December 31, 2021 and 2020.

Net Investment [1]

	December 31	
(Dollars in millions)	2021	2020
Lease receivables	$ 16,806	$ 17,627
Unguaranteed residuals	2,078	2,303
Total net investment in sales-type and direct financing leases	**$ 18,884**	$ 19,930

(1) In certain cases, the Corporation obtains third-party residual value insurance to reduce its residual asset risk. The carrying value of residual assets with third-party residual value insurance for at least a portion of the asset value was $7.1 billion and $6.9 billion at December 31, 2021 and 2020.

The table below presents lease income at December 31, 2021 and 2020.

Lease Income

	December 31	
(Dollars in millions)	2021	2020
Sales-type and direct financing leases	$ 613	$ 707
Operating leases	930	931
Total lease income	**$ 1,543**	$ 1,638

Lessee Arrangements

The Corporation's lessee arrangements predominantly consist of operating leases for premises and equipment; the Corporation's financing leases are not significant.

Lease terms may contain renewal and extension options and early termination features. Generally, these options do not impact the lease term because the Corporation is not reasonably certain that it will exercise the options.

The following table provides information on the right-of-use assets, lease liabilities and weighted-average discount rates and lease terms at December 31, 2021 and 2020.

Lessee Arrangements

	December 31	
(Dollars in millions)	2021	2020
Right-of-use asset	$ 10,233	$ 10,000
Lease liabilities	10,858	10,474
Weighted-average discount rate used to calculate present value of future minimum lease payments	2.91 %	3.38 %
Weighted-average lease term (in years)	9.0	8.4
Lease Cost and Supplemental Information:		
Operating lease cost	$ 2,025	$ 2,149
Variable lease cost [1]	462	474
Total lease cost [2]	**$ 2,487**	$ 2,623
Right-of-use assets obtained in exchange for new operating lease liabilities [3]	$ 1,713	$ 851
Operating cash flows from operating leases [4]	1,964	2,039

(1) Primarily consists of payments for common area maintenance and property taxes.
(2) Amounts are recorded in occupancy and equipment expense in the Consolidated Statement of Income.
(3) Represents non-cash activity and, accordingly, is not reflected in the Consolidated Statement of Cash Flows.
(4) Represents cash paid for amounts included in the measurements of lease liabilities.

Maturity Analysis

The maturities of lessor and lessee arrangements outstanding at December 31, 2021 are presented in the table below based on undiscounted cash flows.

Maturities of Lessor and Lessee Arrangements

	Lessor		Lessee [1]
	Operating Leases	Sales-type and Direct Financing Leases [2]	Operating Leases
(Dollars in millions)	December 31, 2021		
2022	$ 848	$ 5,208	$ 1,917
2023	742	4,617	1,716
2024	591	3,888	1,550
2025	412	1,318	1,309
2026	296	1,634	1,153
Thereafter	696	1,358	4,758
Total undiscounted cash flows	$ 3,585	18,023	12,403
Less: Net present value adjustment		1,217	1,545
Total [3]		**$ 16,806**	**$ 10,858**

(1) Excludes $179 million in commitments under lessee arrangements that have not yet commenced with lease terms that will begin in 2022.
(2) Includes $10.9 billion in commercial lease financing receivables and $5.9 billion in direct/indirect consumer lease financing receivables.
(3) Represents lease receivables for lessor arrangements and lease liabilities for lessee arrangements.

NOTE 9 Deposits

The scheduled contractual maturities for total time deposits at December 31, 2021 are presented in the table below.

Contractual Maturities of Total Time Deposits

(Dollars in millions)	U.S.	Non-U.S.	Total
Due in 2022	$ 34,555	$ 9,193	**$ 43,748**
Due in 2023	1,934	75	**2,009**
Due in 2024	350	5	**355**
Due in 2025	230	11	**241**
Due in 2026	120	1,361	**1,481**
Thereafter	248	29	**277**
Total time deposits	$ 37,437	$ 10,674	**$ 48,111**

At December 31, 2021 and 2020, the Corporation had aggregate U.S. time deposits of $9.4 billion and $10.7 billion and non-U.S. time deposits of $10.6 billion and $11.8 billion in denominations that met or exceeded insurance limits.

NOTE 10 Securities Financing Agreements, Short-term Borrowings and Restricted Cash

The Corporation enters into securities financing agreements to accommodate customers (also referred to as “matched-book transactions”), obtain securities to cover short positions and finance inventory positions. The Corporation elects to account for certain securities financing agreements and short-term borrowings under the fair value option. For more information on the fair value option, see *Note 21 – Fair Value Option*.

Offsetting of Securities Financing Agreements

Substantially all of the Corporation’s securities financing activities are transacted under legally enforceable master repurchase agreements or legally enforceable master securities lending agreements that give the Corporation, in the event of default by the counterparty, the right to liquidate securities held and to offset receivables and payables with the same counterparty. The Corporation offsets securities financing transactions with the same counterparty on the Consolidated Balance Sheet where it has such a legally enforceable master netting agreement and the transactions have the same maturity date.

The Securities Financing Agreements table presents securities financing agreements included on the Consolidated Balance Sheet in federal funds sold and securities borrowed or purchased under agreements to resell, and in federal funds purchased and securities loaned or sold under agreements to repurchase at December 31, 2021 and 2020. Balances are presented on a gross basis, prior to the application of counterparty netting. Gross assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements. For more information on the offsetting of derivatives, see *Note 3 – Derivatives.*

Securities Financing Agreements

(Dollars in millions)	Gross Assets/ Liabilities [1]	Amounts Offset	Net Balance Sheet Amount	Financial Instruments [2]	Net Assets/ Liabilities
			December 31, 2021		
Securities borrowed or purchased under agreements to resell [3]	**$ 527,054**	**$ (276,334)**	**$ 250,720**	**$ (229,525)**	**$ 21,195**
Securities loaned or sold under agreements to repurchase	**$ 468,663**	**$ (276,334)**	**$ 192,329**	**$ (181,860)**	**$ 10,469**
Other [4]	**11,391**	**—**	**11,391**	**(11,391)**	**—**
Total	**$ 480,054**	**$ (276,334)**	**$ 203,720**	**$ (193,251)**	**$ 10,469**
			December 31, 2020		
Securities borrowed or purchased under agreements to resell [3]	$ 492,387	$ (188,329)	$ 304,058	$ (272,351)	$ 31,707
Securities loaned or sold under agreements to repurchase	$ 358,652	$ (188,329)	$ 170,323	$ (158,867)	$ 11,456
Other [4]	16,210	—	16,210	(16,210)	—
Total	$ 374,862	$ (188,329)	$ 186,533	$ (175,077)	$ 11,456

(1) Includes activity where uncertainty exists as to the enforceability of certain master netting agreements under bankruptcy laws in some countries or industries.
(2) Includes securities collateral received or pledged under repurchase or securities lending agreements where there is a legally enforceable master netting agreement. These amounts are not offset on the Consolidated Balance Sheet, but are shown as a reduction to derive a net asset or liability. Securities collateral received or pledged where the legal enforceability of the master netting agreements is uncertain is excluded from the table.
(3) Excludes repurchase activity of $20.1 billion and $14.7 billion reported in loans and leases on the Consolidated Balance Sheet at December 31, 2021 and 2020.
(4) Balance is reported in accrued expenses and other liabilities on the Consolidated Balance Sheet and relates to transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be pledged as collateral or sold. In these transactions, the Corporation recognizes an asset at fair value, representing the securities received, and a liability, representing the obligation to return those securities.

Repurchase Agreements and Securities Loaned Transactions Accounted for as Secured Borrowings

The following tables present securities sold under agreements to repurchase and securities loaned by remaining contractual term to maturity and class of collateral pledged. Included in “Other” are transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be pledged as collateral or sold. Certain agreements contain a right to substitute collateral and/or terminate the agreement prior to maturity at the option of the Corporation or the counterparty. Such agreements are included in the table below based on the remaining contractual term to maturity.

Remaining Contractual Maturity

(Dollars in millions)	Overnight and Continuous	30 Days or Less	After 30 Days Through 90 Days	Greater than 90 Days [1]	Total
	December 31, 2021				
Securities sold under agreements to repurchase	**$ 148,023**	**$ 194,964**	**$ 36,939**	**$ 36,501**	**$ 416,427**
Securities loaned	**46,231**	**466**	**1,428**	**4,111**	**52,236**
Other	**11,391**	**—**	**—**	**—**	**11,391**
Total	**$ 205,645**	**$ 195,430**	**$ 38,367**	**$ 40,612**	**$ 480,054**
	December 31, 2020				
Securities sold under agreements to repurchase	$ 158,400	$ 122,448	$ 32,149	$ 22,684	$ 335,681
Securities loaned	19,140	271	1,029	2,531	22,971
Other	16,210	—	—	—	16,210
Total	$ 193,750	$ 122,719	$ 33,178	$ 25,215	$ 374,862

(1) No agreements have maturities greater than three years.

Class of Collateral Pledged

(Dollars in millions)	Securities Sold Under Agreements to Repurchase	Securities Loaned	Other	Total
	December 31, 2021			
U.S. government and agency securities	**$ 201,546**	**$ 27**	**$ —**	**$ 201,573**
Corporate securities, trading loans and other	**12,838**	**3,440**	**1,148**	**17,426**
Equity securities	**19,907**	**48,650**	**10,192**	**78,749**
Non-U.S. sovereign debt	**178,019**	**119**	**51**	**178,189**
Mortgage trading loans and ABS	**4,117**	**—**	**—**	**4,117**
Total	**$ 416,427**	**$ 52,236**	**$ 11,391**	**$ 480,054**
	December 31, 2020			
U.S. government and agency securities	$ 195,167	$ 5	$ —	$ 195,172
Corporate securities, trading loans and other	8,633	1,628	1,217	11,478
Equity securities	14,752	21,125	14,931	50,808
Non-U.S. sovereign debt	113,142	213	62	113,417
Mortgage trading loans and ABS	3,987	—	—	3,987
Total	$ 335,681	$ 22,971	$ 16,210	$ 374,862

Under repurchase agreements, the Corporation is required to post collateral with a market value equal to or in excess of the principal amount borrowed. For securities loaned transactions, the Corporation receives collateral in the form of cash, letters of credit or other securities. To determine whether the market value of the underlying collateral remains sufficient, collateral is generally valued daily, and the Corporation may be required to deposit additional collateral or may receive or return collateral pledged when appropriate. Repurchase agreements and securities loaned transactions are generally either overnight, continuous (i.e., no stated term) or short-term. The Corporation manages liquidity risks related to these agreements by sourcing funding from a diverse group of counterparties, providing a range of securities collateral and pursuing longer durations, when appropriate.

Short-term Bank Notes

Bank of America, N.A. maintains a global program to offer up to a maximum of $75.0 billion outstanding at any one time, of bank notes with fixed or floating rates and maturities of at least seven days from the date of issue. Short-term bank notes outstanding under this program totaled $1.8 billion and $3.9 billion at December 31, 2021 and 2020. These short-term bank notes, along with Federal Home Loan Bank advances, U.S. Treasury tax and loan notes, and term federal funds purchased, are included in short-term borrowings on the Consolidated Balance Sheet.

Restricted Cash

At December 31, 2021 and 2020, the Corporation held restricted cash included within cash and cash equivalents on the Consolidated Balance Sheet of $5.9 billion and $7.0 billion, predominantly related to cash segregated in compliance with securities regulations and cash held on deposit with central banks to meet reserve requirements.

NOTE 11 Long-term Debt

Long-term debt consists of borrowings having an original maturity of one year or more. The table below presents the balance of long-term debt at December 31, 2021 and 2020, and the related contractual rates and maturity dates as of December 31, 2021.

(Dollars in millions)	Weighted-average Rate	Interest Rates	Maturity Dates	December 31 2021	December 31 2020
Notes issued by Bank of America Corporation [1]					
Senior notes:					
Fixed	2.85 %	0.25 - 8.05 %	2022 - 2052	$ 194,191	$ 174,385
Floating	0.64	0.02 - 4.88	2023 - 2044	18,753	16,788
Senior structured notes				15,086	17,033
Subordinated notes:					
Fixed	4.88	2.94 - 8.57	2024 - 2045	22,311	23,337
Floating	2.18	0.82 - 2.48	2026 - 2036	2,371	799
Junior subordinated notes:					
Fixed	6.71	6.45 - 8.05	2027 - 2066	741	738
Floating	0.97	0.97	2056	1	1
Total notes issued by Bank of America Corporation				253,454	233,081
Notes issued by Bank of America, N.A.					
Senior notes:					
Fixed	3.34	3.34	2023	501	511
Floating	0.26	0.20 - 0.33	2022 - 2023	3,173	2,323
Subordinated notes	6.00	6.00	2036	1,780	1,883
Advances from Federal Home Loan Banks:					
Fixed	1.54	0.01 - 7.72	2022 - 2034	290	599
Securitizations and other BANA VIEs [2]				3,338	6,296
Other				680	683
Total notes issued by Bank of America, N.A.				9,762	12,295
Other debt					
Structured liabilities [3]				16,599	16,792
Nonbank VIEs [2]				249	757
Other				53	9
Total notes issued by nonbank and other entities				16,901	17,558
Total long-term debt				$ 280,117	$ 262,934

(1) Includes total loss-absorbing capacity compliant debt.

(2) Represents liabilities of consolidated VIEs included in total long-term debt on the Consolidated Balance Sheet. Long-term debt of VIEs is collateralized by the assets of the VIEs. At December 31, 2021, amount includes debt predominantly from credit card securitization and other VIEs of $3.2 billion and $211 million. For more information, see *Note 6 – Securitizations and Other Variable Interest Entities.*

(3) Includes debt outstanding of $5.4 billion and $4.8 billion at December 31, 2021 and 2020 that was issued by BofA Finance LLC, a consolidated finance subsidiary of Bank of America Corporation, the parent company, and is fully and unconditionally guaranteed by the parent company.

During 2021, the Corporation issued $76.7 billion of long-term debt consisting of $56.2 billion of notes issued by Bank of America Corporation, $8.0 billion of notes issued by Bank of America, N.A. and $12.5 billion of other debt. During 2020, the Corporation issued $56.9 billion of long-term debt consisting of $43.8 billion of notes issued by Bank of America Corporation, $4.8 billion of notes issued by Bank of America, N.A. and $8.3 billion of other debt.

During 2021, the Corporation had total long-term debt maturities and redemptions in the aggregate of $46.4 billion consisting of $24.4 billion for Bank of America Corporation, $10.4 billion for Bank of America, N.A. and $11.6 billion of other debt. During 2020, the Corporation had total long-term debt maturities and redemptions in the aggregate of $47.1 billion consisting of $22.6 billion for Bank of America Corporation, $11.5 billion for Bank of America, N.A. and $13.0 billion of other debt.

Bank of America Corporation and Bank of America, N.A. maintain various U.S. and non-U.S. debt programs to offer both senior and subordinated notes. The notes may be denominated in U.S. dollars or foreign currencies. At December 31, 2021 and 2020, the amount of foreign currency-denominated debt translated into U.S. dollars included in total long-term debt was $53.1 billion and $54.6 billion. Foreign currency contracts may be used to convert certain foreign currency-denominated debt into U.S. dollars.

The weighted-average effective interest rates for total long-term debt (excluding senior structured notes), total fixed-rate debt and total floating-rate debt were 2.83 percent, 3.08 percent and 0.75 percent, respectively, at December 31, 2021, and 3.02 percent, 3.29 percent and 0.71 percent, respectively, at December 31, 2020. The Corporation's ALM activities maintain an overall interest rate risk management strategy that incorporates the use of interest rate contracts to manage fluctuations in earnings caused by interest rate volatility. The Corporation's goal is to manage interest rate sensitivity so that movements in interest rates do not have a significantly adverse effect on earnings and capital. The weighted-average rates are the contractual interest rates on the debt and do not reflect the impacts of derivative transactions.

The following table shows the carrying value for aggregate annual contractual maturities of long-term debt as of December 31, 2021. Included in the table are certain structured notes issued by the Corporation that contain provisions whereby the borrowings are redeemable at the option of the holder (put options) at specified dates prior to maturity. Other structured notes have coupon or repayment terms linked to the performance of debt or equity securities, indices, currencies or commodities, and the maturity may be accelerated based on the value of a referenced index or security. In both cases, the Corporation or a subsidiary may be required to settle the obligation for cash or other securities prior to the contractual maturity date. These borrowings are reflected in the table as maturing at their contractual maturity date.

Long-term Debt by Maturity

(Dollars in millions)	2022	2023	2024	2025	2026	Thereafter	Total
Bank of America Corporation							
Senior notes	$ 3,217	$ 23,326	$ 23,462	$ 21,534	$ 17,968	$ 123,437	**$ 212,944**
Senior structured notes	1,937	572	396	398	819	10,964	**15,086**
Subordinated notes	—	—	3,283	5,379	5,171	10,849	**24,682**
Junior subordinated notes	—	—	—	—	—	742	**742**
Total Bank of America Corporation	5,154	23,898	27,141	27,311	23,958	145,992	**253,454**
Bank of America, N.A.							
Senior notes	1,600	2,074	—	—	—	—	**3,674**
Subordinated notes	—	—	—	—	—	1,780	**1,780**
Advances from Federal Home Loan Banks	202	1	—	16	10	61	**290**
Securitizations and other Bank VIEs [(1)]	1,259	988	1,000	1	—	90	**3,338**
Other	102	386	32	143	7	10	**680**
Total Bank of America, N.A.	3,163	3,449	1,032	160	17	1,941	**9,762**
Other debt							
Structured Liabilities	3,586	2,823	1,996	668	1,621	5,905	**16,599**
Nonbank VIEs [(1)]	2	51	—	—	—	196	**249**
Other	—	—	—	—	—	53	**53**
Total other debt	3,588	2,874	1,996	668	1,621	6,154	**16,901**
Total long-term debt	**$ 11,905**	**$ 30,221**	**$ 30,169**	**$ 28,139**	**$ 25,596**	**$ 154,087**	**$ 280,117**

(1) Represents liabilities of consolidated VIEs included in total long-term debt on the Consolidated Balance Sheet.

NOTE 12 Commitments and Contingencies

In the normal course of business, the Corporation enters into a number of off-balance sheet commitments. These commitments expose the Corporation to varying degrees of credit and market risk and are subject to the same credit and market risk limitation reviews as those instruments recorded on the Consolidated Balance Sheet.

Credit Extension Commitments

The Corporation enters into commitments to extend credit such as loan commitments, SBLCs and commercial letters of credit to meet the financing needs of its customers. The following table includes the notional amount of unfunded legally binding lending commitments net of amounts distributed (i.e., syndicated or participated) to other financial institutions. The distributed amounts were $10.7 billion and $10.5 billion at December 31, 2021 and 2020. The carrying value of the Corporation's credit extension commitments at December 31, 2021 and 2020, excluding commitments accounted for under the fair value option, was $1.5 billion and $1.9 billion, which predominantly related to the reserve for unfunded lending commitments. The carrying value of these commitments is classified in accrued expenses and other liabilities on the Consolidated Balance Sheet.

Legally binding commitments to extend credit generally have specified rates and maturities. Certain of these commitments have adverse change clauses that help to protect the Corporation against deterioration in the borrower's ability to pay.

The following table includes the notional amount of commitments of $4.8 billion and $4.0 billion at December 31, 2021 and 2020 that are accounted for under the fair value option. However, the table excludes the cumulative net fair value for these commitments of $97 million and $99 million at December 31, 2021 and 2020, which is classified in accrued expenses and other liabilities. For more information regarding the Corporation's loan commitments accounted for under the fair value option, see *Note 21 – Fair Value Option.*

Credit Extension Commitments

(Dollars in millions)	Expire in One Year or Less	Expire After One Year Through Three Years	Expire After Three Years Through Five Years	Expire After Five Years	Total
			December 31, 2021		
Notional amount of credit extension commitments					
Loan commitments [1]	$ **102,464**	$ **190,687**	$ **174,978**	$ **26,635**	$ **494,764**
Home equity lines of credit	**890**	**5,097**	**10,268**	**24,276**	**40,531**
Standby letters of credit and financial guarantees [2]	**22,359**	**10,742**	**2,017**	**422**	**35,540**
Letters of credit	**1,145**	**124**	**56**	**98**	**1,423**
Other commitments [3]	**18**	**59**	**81**	**1,233**	**1,391**
Legally binding commitments	**126,876**	**206,709**	**187,400**	**52,664**	**573,649**
Credit card lines [4]	**406,169**	**—**	**—**	**—**	**406,169**
Total credit extension commitments	$ **533,045**	$ **206,709**	$ **187,400**	$ **52,664**	$ **979,818**
			December 31, 2020		
Notional amount of credit extension commitments					
Loan commitments [1]	$ 109,406	$ 171,887	$ 139,508	$ 16,091	$ 436,892
Home equity lines of credit	710	2,992	8,738	29,892	42,332
Standby letters of credit and financial guarantees [2]	19,962	12,038	2,397	1,257	35,654
Letters of credit	886	197	25	27	1,135
Other commitments [3]	22	132	125	1,219	1,498
Legally binding commitments	130,986	187,246	150,793	48,486	517,511
Credit card lines [4]	384,955	—	—	—	384,955
Total credit extension commitments	$ 515,941	$ 187,246	$ 150,793	$ 48,486	$ 902,466

(1) At December 31, 2021 and 2020, $4.6 billion and $4.8 billion of these loan commitments were held in the form of a security.
(2) The notional amounts of SBLCs and financial guarantees classified as investment grade and non-investment grade based on the credit quality of the underlying reference name within the instrument were $26.3 billion and $8.7 billion at December 31, 2021, and $25.0 billion and $10.2 billion at December 31, 2020. Amounts in the table include consumer SBLCs of $512 million and $500 million at December 31, 2021 and 2020.
(3) Primarily includes second-loss positions on lease-end residual value guarantees.
(4) Includes business card unused lines of credit.

Other Commitments

At December 31, 2021 and 2020, the Corporation had commitments to purchase loans (e.g., residential mortgage and commercial real estate) of $181 million and $93 million, which upon settlement will be included in trading account assets, loans or LHFS, and commitments to purchase commercial loans of $518 million and $645 million, which upon settlement will be included in trading account assets.

At December 31, 2021 and 2020, the Corporation had commitments to purchase commodities, primarily liquefied natural gas, of $949 million and $582 million, which upon settlement will be included in trading account assets.

At December 31, 2021 and 2020, the Corporation had commitments to enter into resale and forward-dated resale and securities borrowing agreements of $92.0 billion and $66.5 billion, and commitments to enter into forward-dated repurchase and securities lending agreements of $32.6 billion and $32.1 billion. These commitments generally expire within the next 12 months.

At December 31, 2021 and 2020, the Corporation had a commitment to originate or purchase up to $4.0 billion and $3.9 billion on a rolling 12-month basis, of auto loans and leases from a strategic partner. This commitment extends through November 2026 and can be terminated with 12 months prior notice.

At December 31, 2021 and 2020, the Corporation had unfunded equity investment commitments of $395 million and $213 million.

Other Guarantees

Bank-owned Life Insurance Book Value Protection

The Corporation sells products that offer book value protection to insurance carriers who offer group life insurance policies to corporations, primarily banks. At December 31, 2021 and 2020, the notional amount of these guarantees totaled $6.3 billion and $7.1 billion. At December 31, 2021 and 2020, the Corporation's maximum exposure related to these guarantees totaled $928 million and $1.1 billion, with estimated maturity dates between 2033 and 2039.

Indemnifications

In the ordinary course of business, the Corporation enters into various agreements that contain indemnifications, such as tax indemnifications, whereupon payment may become due if certain external events occur, such as a change in tax law. The indemnification clauses are often standard contractual terms and were entered into in the normal course of business based on an assessment that the risk of loss would be remote. These agreements typically contain an early termination clause that permits the Corporation to exit the agreement upon these events. The maximum potential future payment under indemnification agreements is difficult to assess for several reasons, including the occurrence of an external event, the inability to predict future changes in tax and other laws, the difficulty in determining how such laws would apply to parties in contracts, the absence of exposure limits contained in standard contract language and the timing of any early termination clauses. Historically, any payments made under these guarantees have been de minimis. The Corporation has assessed the probability of making such payments in the future as remote.

Merchant Services

Prior to July 1, 2020, a significant portion of the Corporation's merchant processing activity was performed by a joint venture in which the Corporation held a 49 percent ownership interest. Effective July 1, 2020, the Corporation received its share of the joint venture's merchant contracts and began performing merchant processing services for these merchants.

The Corporation in its role as merchant acquirer or as a sponsor of other merchant acquirers may be held liable for any reversed charges that cannot be collected from the merchants, due to, among other things, merchant fraud or insolvency. If charges are properly reversed after a purchase and cannot be collected from either the merchants or merchant acquirers, the Corporation may be held liable for these reversed charges. The ability to reverse a charge is primarily governed by the applicable regulatory and card network rules, which include, but are not limited to, the type of charge, type of payment used and time limits. The total amount of transactions processed for the preceding six-month period, which was $476.2 billion, is an estimate of the Corporation's maximum potential exposure as of December 31, 2021. The Corporation's risk in this area primarily relates to circumstances where a cardholder has purchased goods or services for future delivery. The Corporation mitigates this risk by requiring cash deposits, guarantees, letters of credit or other types of collateral from certain merchants. The Corporation's reserves for contingent losses and the losses incurred related to the merchant processing activity were not significant. The Corporation continues to monitor its exposure in this area due to the potential economic impacts of the pandemic.

Exchange and Clearing House Member Guarantees

The Corporation is a member of various securities and derivative exchanges and clearinghouses, both in the U.S. and other countries. As a member, the Corporation may be required to pay a pro-rata share of the losses incurred by some of these organizations as a result of another member default and under other loss scenarios. The Corporation's potential obligations may be limited to its membership interests in such exchanges and clearinghouses, to the amount (or multiple) of the Corporation's contribution to the guarantee fund or, in limited instances, to the full pro-rata share of the residual losses after applying the guarantee fund. The Corporation's maximum potential exposure under these membership agreements is difficult to estimate; however, the Corporation has assessed the probability of making any such payments as remote.

Prime Brokerage and Securities Clearing Services

In connection with its prime brokerage and clearing businesses, the Corporation performs securities clearance and settlement services with other brokerage firms and clearinghouses on behalf of its clients. Under these arrangements, the Corporation stands ready to meet the obligations of its clients with respect to securities transactions. The Corporation's obligations in this respect are secured by the assets in the clients' accounts and the accounts of their customers as well as by any proceeds received from the transactions cleared and settled by the Corporation on behalf of clients or their customers. The Corporation's maximum potential exposure under these arrangements is difficult to estimate; however, the potential for the Corporation to incur material losses pursuant to these arrangements is remote.

Fixed Income Clearing Corporation Sponsored Member Repo Program

The Corporation acts as a sponsoring member in a repo program whereby the Corporation clears certain eligible resale and repurchase agreements through the Government Securities Division of the Fixed Income Clearing Corporation on behalf of clients that are sponsored members in accordance with the Fixed Income Clearing Corporation's rules. As part of this program, the Corporation guarantees the payment and performance of its sponsored members to the Fixed Income Clearing Corporation. The Corporation's guarantee obligation is secured by a security interest in cash or high-quality securities collateral placed by clients with the clearinghouse and therefore, the potential for the Corporation to incur significant losses under this arrangement is remote. The Corporation's maximum potential exposure, without taking into consideration the related collateral, was $42.0 billion and $22.5 billion at December 31, 2021 and 2020.

Other Guarantees

In the normal course of business, the Corporation periodically guarantees the obligations of its affiliates in a variety of transactions including ISDA-related transactions and non-ISDA related transactions such as commodities trading, repurchase agreements, prime brokerage agreements and other transactions.

Guarantees of Certain Long-term Debt

The Corporation, as the parent company, fully and unconditionally guarantees the securities issued by BofA Finance LLC, a consolidated finance subsidiary of the Corporation, and effectively provides for the full and unconditional guarantee of trust securities issued by certain statutory trust companies that are 100 percent owned finance subsidiaries of the Corporation.

Representations and Warranties Obligations and Corporate Guarantees

The Corporation securitizes first-lien residential mortgage loans generally in the form of RMBS guaranteed by the GSEs or by GNMA in the case of FHA-insured, VA-guaranteed and Rural Housing Service-guaranteed mortgage loans, and sells pools of first-lien residential mortgage loans in the form of whole loans. In addition, in prior years, legacy companies and certain subsidiaries sold pools of first-lien residential mortgage loans and home equity loans as private-label securitizations or in the form of whole loans. In connection with these transactions, the Corporation or certain of its subsidiaries or legacy companies make and have made various representations and warranties. Breaches of these representations and warranties have resulted in and may continue to result in the requirement to repurchase mortgage loans or to otherwise make whole or provide indemnification or other remedies to sponsors, investors, securitization trusts, guarantors, insurers or other parties (collectively, repurchases).

Unresolved Repurchase Claims

Unresolved representations and warranties repurchase claims represent the notional amount of repurchase claims made by counterparties, typically the outstanding principal balance or the unpaid principal balance at the time of default. In the case of first-lien mortgages, the claim amount is often significantly greater than the expected loss amount due to the benefit of collateral and, in some cases, mortgage insurance or mortgage guarantee payments.

The notional amount of unresolved repurchase claims at December 31, 2021 and 2020 was $8.4 billion and $8.5 billion. These balances included $2.8 billion and $2.9 billion at December 31, 2021 and 2020 of claims related to loans in specific private-label securitization groups or tranches where the Corporation owns substantially all of the outstanding securities or will otherwise realize the benefit of any repurchase claims paid.

During 2021, the Corporation received $49 million in new repurchase claims that were not time-barred. During 2021, $141 million in claims were resolved.

Reserve and Related Provision

The reserve for representations and warranties obligations and corporate guarantees was $1.2 billion and $1.3 billion at December 31, 2021 and 2020 and is included in accrued expenses and other liabilities on the Consolidated Balance Sheet, and the related provision is included in other income in the Consolidated Statement of Income. The representations and warranties reserve represents the Corporation's best estimate of probable incurred losses, is based on its experience in previous negotiations, and is subject to judgment, a variety of assumptions and known or unknown uncertainties. Future representations and warranties losses may occur in excess of the amounts recorded for these exposures; however, the Corporation does not expect such amounts to be material to the Corporation's financial condition and liquidity. See Litigation and Regulatory Matters below for the Corporation's combined range of possible loss in excess of the reserve for representations and warranties and the accrued liability for litigation.

Litigation and Regulatory Matters

In the ordinary course of business, the Corporation and its subsidiaries are routinely defendants in or parties to many pending and threatened legal, regulatory and governmental actions and proceedings. In view of the inherent difficulty of predicting the outcome of such matters, particularly where the claimants seek very large or indeterminate damages or where the matters present novel legal theories or involve a large number of parties, the Corporation generally cannot predict the eventual outcome of the pending matters, timing of the ultimate resolution of these matters, or eventual loss, fines or penalties related to each pending matter.

As a matter develops, the Corporation, in conjunction with any outside counsel handling the matter, evaluates whether such matter presents a loss contingency that is probable and estimable, and, for the matters described below whether a loss in excess of any accrued liability is reasonably possible in future periods. Once the loss contingency is deemed to be both probable and estimable, the Corporation will establish an accrued liability and record a corresponding amount of litigation-related expense. The Corporation continues to monitor the matter for further developments that could affect the amount of the accrued liability that has been previously established. Excluding expenses of internal and external legal service providers, litigation-related expense of $164 million and $823 million was recognized in 2021 and 2020.

For any matter disclosed in this Note for which a loss in future periods is reasonably possible and estimable (whether in excess of an accrued liability or where there is no accrued liability) and for representations and warranties exposures, the Corporation's estimated range of possible loss is $0 to $1.0 billion in excess of the accrued liability, if any, as of December 31, 2021.

The accrued liability and estimated range of possible loss are based upon currently available information and subject to significant judgment, a variety of assumptions and known and unknown uncertainties. The matters underlying the accrued liability and estimated range of possible loss are unpredictable and may change from time to time, and actual losses may vary significantly from the current estimate and accrual. The estimated range of possible loss does not represent the Corporation's maximum loss exposure.

Information is provided below regarding the nature of the litigation and, where specified, associated claimed damages. Based on current knowledge, and taking into account accrued liabilities, management does not believe that loss contingencies arising from pending matters, including the matters described below, will have a material adverse effect on the consolidated financial condition or liquidity of the Corporation. However, in light of the significant judgment, variety of assumptions and uncertainties involved in these matters, some of which are beyond the Corporation's control, and the very large or indeterminate damages sought in some of these matters, an adverse outcome in one or more of these matters could be material to the Corporation's business or results of operations for any particular reporting period, or cause significant reputational harm.

Ambac Bond Insurance Litigation

Ambac Assurance Corporation and the Segregated Account of Ambac Assurance Corporation (together, Ambac) have filed four separate lawsuits against the Corporation and its subsidiaries relating to bond insurance policies Ambac provided on certain securitized pools of HELOCs, first-lien subprime home equity loans, fixed-rate second-lien mortgage loans and negative amortization pay-option adjustable-rate mortgage loans. Ambac alleges that they have paid or will pay claims as a result of defaults in the underlying loans and asserts that the defendants misrepresented the characteristics of the underlying loans and/or breached certain contractual representations and warranties regarding the underwriting and servicing of the loans. In those actions where the Corporation is named as a defendant, Ambac contends the Corporation is liable on successor and vicarious liability theories. These actions are at various procedural stages with material developments provided below.

Ambac v. Countrywide I

Ambac named the Corporation and several Countrywide entities as defendants in an action filed on September 28, 2010 in New York Supreme Court asserting claims for fraudulent inducement as well as breach of contract and seeking damages in excess of $2.2 billion, plus punitive damages. The Supreme Court dismissed Ambac's fraudulent inducement claim, and on May 11, 2021, the First Department, a New York State appellate court (First Department), affirmed the dismissal. The Supreme Court has scheduled a non-jury trial for September 7, 2022 on the contract claim that remains.

Ambac v. Countrywide II

On December 30, 2014, Ambac filed a complaint in New York Supreme Court against the same defendants, claiming fraudulent inducement against Countrywide, and successor and vicarious liability against the Corporation, while seeking damages in excess of $600 million, plus punitive damages.

Ambac v. Countrywide IV

On July 21, 2015, Ambac filed an action in New York Supreme Court against Countrywide asserting the same claims for fraudulent inducement that Ambac asserted in the now dismissed *Ambac v. Countrywide III.* The complaint seeks damages in excess of $350 million, plus punitive damages. On December 8, 2020, the New York Supreme Court dismissed Ambac's complaint. On February 8, 2022, the First Department affirmed the dismissal.

Ambac v. First Franklin
On April 16, 2012, Ambac filed an action against BANA, First Franklin and various Merrill Lynch entities, including Merrill Lynch, Pierce, Fenner & Smith Incorporated, in New York Supreme Court relating to guaranty insurance Ambac provided on a First Franklin securitization sponsored by Merrill Lynch. The complaint alleges fraudulent inducement and breach of contract, including breach of contract claims against BANA based upon its servicing of the loans in the securitization. Ambac seeks as damages hundreds of millions of dollars that Ambac alleges it has paid or will pay in claims.

Deposit Insurance Assessment

On January 9, 2017, the Federal Deposit Insurance Corporation (FDIC) filed suit against BANA in the U.S. District Court for the District of Columbia alleging failure to pay a December 15, 2016 invoice for additional deposit insurance assessments and interest in the amount of $542 million for the quarters ending June 30, 2013 through December 31, 2014.

On April 7, 2017, the FDIC amended its complaint to add a claim for additional deposit insurance and interest in the amount of $583 million for the quarters ending March 31, 2012 through March 31, 2013. The FDIC asserts these claims based on BANA's alleged underreporting of counterparty exposures that resulted in underpayment of assessments for those quarters and its Enforcement Section is also conducting a parallel investigation related to the same alleged reporting error. BANA disagrees with the FDIC's interpretation of the regulations as they existed during the relevant time period and is defending itself against the FDIC's claims. Pending final resolution, BANA has pledged security satisfactory to the FDIC related to the disputed additional assessment amounts. On March 27, 2018, the U.S. District Court for the District of Columbia denied BANA's partial motion to dismiss certain of the FDIC's claims.

LIBOR

The Corporation, BANA and certain Merrill Lynch entities have been named as defendants along with most of the other LIBOR panel banks in a number of individual and putative class actions by persons alleging they sustained losses on U.S. dollar LIBOR-based financial instruments as a result of collusion or manipulation by defendants regarding the setting of U.S. dollar LIBOR. Plaintiffs assert a variety of claims, including antitrust, Commodity Exchange Act, Racketeer Influenced and Corrupt Organizations (RICO), Securities Exchange Act of 1934, common law fraud and breach of contract claims, and seek compensatory, treble and punitive damages, and injunctive relief. All but one of the cases naming the Corporation and its affiliates relating to U.S. dollar LIBOR are pending in the U.S. District Court for the Southern District of New York ("District Court"). The District Court has dismissed all RICO claims, and dismissed all manipulation claims against Bank of America entities based on alleged trader conduct. The District Court has also substantially limited the scope of antitrust, Commodity Exchange Act and various other claims, including by dismissing in their entirety certain individual and putative class plaintiffs' antitrust claims for lack of standing. On December 30, 2021, the U.S. Court of Appeals for the Second Circuit affirmed the dismissal of these antitrust claims for lack of standing. Certain individual and putative class actions remain pending against the Corporation, BANA and certain Merrill Lynch entities. On February 28, 2018, the District Court granted certification of a class of persons that purchased OTC swaps and notes that referenced U.S. dollar LIBOR from one of the U.S. dollar LIBOR panel banks, limited to claims under Section 1 of the Sherman Act.

U.S. Bank - Harborview and SURF/OWNIT Repurchase Litigation

Beginning in 2011, U.S. Bank, National Association (U.S. Bank), as trustee for the HarborView Mortgage Loan Trust 2005-10 and various SURF/OWNIT RMBS trusts filed complaints against the Corporation, Countrywide entities, Merrill Lynch entities and other affiliates in New York Supreme Court alleging breaches of representations and warranties. The defendants and certain certificate-holders in the trusts agreed to settle the respective matters in amounts not material to the Corporation, subject to acceptance by U.S. Bank. The litigations have been stayed pending finalization of the settlements.

NOTE 13 Shareholders' Equity

Common Stock

Declared Quarterly Cash Dividends on Common Stock [(1)]

Declaration Date	Record Date	Payment Date	Dividend Per Share
February 2, 2022	March 4, 2022	March 25, 2022	$ 0.21
October 20, 2021	December 3, 2021	December 31, 2021	0.21
July 21, 2021	September 3, 2021	September 24, 2021	0.21
April 22, 2021	June 4, 2021	June 25, 2021	0.18
January 19, 2021	March 5, 2021	March 26, 2021	0.18

(1) In 2021, and through February 22, 2022.

The cash dividends paid per share of common stock were $0.78 $0.72 and $0.66 for 2021, 2020 and 2019, respectively.

The table below summarizes common stock repurchases during 2021, 2020 and 2019.

Common Stock Repurchase Summary

(in millions)	2021	2020	2019
Total share repurchases, including CCAR capital plan repurchases	**615**	227	956
Purchase price of shares repurchased and retired			
CCAR capital plan repurchases	**$ 25,126**	$ 7,025	$ 25,644
Other authorized repurchases	**—**	—	2,500
Total shares repurchased	**$ 25,126**	$ 7,025	$ 28,144

Due to uncertainty resulting from the pandemic, the Federal Reserve imposed various restrictions on share repurchase programs and dividends during 2020 and the first half of 2021. Those restrictions ended as of July 1, 2021 for large banks, including the Corporation, and large banks returned to the normal restrictions under the Federal Reserve's stress capital buffer (SCB) framework.

During 2021, in connection with employee stock plans, the Corporation issued 68 million shares of its common stock and, to satisfy tax withholding obligations, repurchased 26 million shares of its common stock. At December 31, 2021, the Corporation had reserved 562 million unissued shares of common stock for future issuances under employee stock plans, convertible notes and preferred stock.

Preferred Stock

The cash dividends declared on preferred stock were $1.4 billion in each of 2021, 2020 and 2019.

On January 28, 2021, the Corporation issued approximately 37,000 shares of 4.125% Non-Cumulative Preferred Stock, Series PP for $915 million, with quarterly dividends commencing in May 2021. The Series PP preferred stock has a liquidation preference of $25,000 per share and is subject to certain restrictions in the event the Corporation fails to declare and pay full dividends.

On October 26, 2021, the Corporation issued 52,000 shares of 4.250% Non-Cumulative Preferred Stock, Series QQ for $1.3 billion, with quarterly dividends commencing in February 2022. The Series QQ preferred stock has a liquidation preference of $25,000 per share and is subject to certain restrictions in the event the Corporation fails to declare and pay full dividends.

On January 25, 2022, the Corporation issued 70,000 shares of 4.375% Non-Cumulative Preferred Stock, Series RR for $1.8 billion. The Series RR preferred stock has a liquidation preference of $25,000 per share and is subject to certain restrictions in the event the Corporation fails to declare and pay full dividends.

On January 31, 2022, the Corporation issued 28,000 shares of 4.75% Non-Cumulative Preferred Stock, Series SS for $700 million. The Series SS preferred stock has a liquidation preference of $25,000 per share and is subject to certain restrictions in the event the Corporation fails to declare and pay full dividends.

In 2021, the Corporation fully redeemed Series CC, Series EE and Series T preferred stock at their liquidation preference values for a total of $2.0 billion.

All series of preferred stock in the Preferred Stock Summary table have a par value of $0.01 per share, are not subject to the operation of a sinking fund, have no participation rights, and with the exception of the Series L Preferred Stock, are not convertible. The holders of the Series B Preferred Stock and Series 1 through 5 Preferred Stock have general voting rights and vote together with the common stock. The holders of the other series included in the table have no general voting rights. All outstanding series of preferred stock of the Corporation have preference over the Corporation's common stock with respect to the payment of dividends and distribution of the Corporation's assets in the event of a liquidation or dissolution. With the exception of the Series B, F and G Preferred Stock, if any dividend payable on these series is in arrears for three or more semi-annual or six or more quarterly dividend periods, as applicable (whether consecutive or not), the holders of these series and any other class or series of preferred stock ranking equally as to payment of dividends and upon which equivalent voting rights have been conferred and are exercisable (voting as a single class) will be entitled to vote for the election of two additional directors. These voting rights terminate when the Corporation has paid in full dividends on these series for at least two semi-annual or four quarterly dividend periods, as applicable, following the dividend arrearage.

The 7.25% Non-Cumulative Perpetual Convertible Preferred Stock, Series L (Series L Preferred Stock) does not have early redemption/call rights. Each share of the Series L Preferred Stock may be converted at any time, at the option of the holder, into 20 shares of the Corporation's common stock plus cash in lieu of fractional shares. The Corporation may cause some or all of the Series L Preferred Stock, at its option, at any time or from time to time, to be converted into shares of common stock at the then-applicable conversion rate if, for 20 trading days during any period of 30 consecutive trading days, the closing price of common stock exceeds 130 percent of the then-applicable conversion price of the Series L Preferred Stock. If a conversion of Series L Preferred Stock occurs at the option of the holder, subsequent to a dividend record date but prior to the dividend payment date, the Corporation will still pay any accrued dividends payable.

The table below presents a summary of perpetual preferred stock outstanding at December 31, 2021.

Preferred Stock Summary

(Dollars in millions, except as noted)

Series	Description	Initial Issuance Date	Total Shares Outstanding	Liquidation Preference per Share (in dollars)	Carrying Value	Per Annum Dividend Rate	Dividend per Share (in dollars)	Annual Dividend	Redemption Period [1]
Series B	7% Cumulative Redeemable	June 1997	7,110	$ 100	$ 1	7.00 %	$ 7	$ —	n/a
Series E [2]	Floating Rate Non-Cumulative	November 2006	12,691	25,000	317	3-mo. LIBOR + 35 bps [3]	1.01	13	On or after November 15, 2011
Series F	Floating Rate Non-Cumulative	March 2012	1,409	100,000	141	3-mo. LIBOR + 40 bps [3]	4,055.55	6	On or after March 15, 2012
Series G	Adjustable Rate Non-Cumulative	March 2012	4,926	100,000	493	3-mo. LIBOR + 40 bps [3]	4,055.55	20	On or after March 15, 2012
Series L	7.25% Non-Cumulative Perpetual Convertible	January 2008	3,080,182	1,000	3,080	7.25 %	72.50	223	n/a
Series U [4]	Fixed-to-Floating Rate Non-Cumulative	May 2013	40,000	25,000	1,000	5.2% to, but excluding, 6/1/23; 3-mo. LIBOR + 313.5 bps thereafter	52.00	52	On or after June 1, 2023
Series X [4]	Fixed-to-Floating Rate Non-Cumulative	September 2014	80,000	25,000	2,000	6.250% to, but excluding, 9/5/24; 3-mo. LIBOR + 370.5 bps thereafter	62.50	125	On or after September 5, 2024
Series Z [4]	Fixed-to-Floating Rate Non-Cumulative	October 2014	56,000	25,000	1,400	6.500% to, but excluding, 10/23/24; 3-mo. LIBOR + 417.4 bps thereafter	65.00	91	On or after October 23, 2024
Series AA [4]	Fixed-to-Floating Rate Non-Cumulative	March 2015	76,000	25,000	1,900	6.100% to, but excluding, 3/17/25; 3-mo. LIBOR + 389.8 bps thereafter	61.00	116	On or after March 17, 2025
Series DD [4]	Fixed-to-Floating Rate Non-Cumulative	March 2016	40,000	25,000	1,000	6.300% to, but excluding, 3/10/26; 3-mo. LIBOR + 455.3 bps thereafter	63.00	63	On or after March 10, 2026
Series FF [4]	Fixed-to-Floating Rate Non-Cumulative	March 2018	94,000	25,000	2,350	5.875% to, but excluding, 3/15/28; 3-mo. LIBOR + 293.1 bps thereafter	58.75	138	On or after March 15, 2028
Series GG [2]	6.000% Non-Cumulative	May 2018	54,000	25,000	1,350	6.000 %	1.50	81	On or after May 16, 2023
Series HH [2]	5.875% Non-Cumulative	July 2018	34,160	25,000	854	5.875 %	1.47	50	On or after July 24, 2023
Series JJ [4]	Fixed-to-Floating Rate Non-Cumulative	June 2019	40,000	25,000	1,000	5.125% to, but excluding, 6/20/24; 3-mo. LIBOR + 329.2 bps thereafter	51.25	51	On or after June 20, 2024
Series KK [2]	5.375% Non-Cumulative	June 2019	55,900	25,000	1,398	5.375 %	1.34	75	On or after June 25, 2024
Series LL [2]	5.000% Non-Cumulative	September 2019	52,400	25,000	1,310	5.000 %	1.25	66	On or after September 17, 2024
Series MM [4]	Fixed-to-Floating Rate Non-Cumulative	January 2020	44,000	25,000	1,100	4.300 %	43.00	47	On or after January 28, 2025
Series NN [2]	4.375% Non-Cumulative	October 2020	44,000	25,000	1,100	4.375 %	1.09	48	On or after November 3, 2025
Series PP [2]	4.125% Non-Cumulative	January 2021	36,600	25,000	915	4.125 %	1.04	38	On or after February 2, 2026
Series QQ [2]	4.250% Non-Cumulative	October 2021	52,000	25,000	1,300	4.250 %	—	—	On or after November 17, 2026
Series 1 [5]	Floating Rate Non-Cumulative	November 2004	3,275	30,000	98	3-mo. LIBOR + 75 bps [6]	0.75	3	On or after November 28, 2009
Series 2 [5]	Floating Rate Non-Cumulative	March 2005	9,967	30,000	299	3-mo. LIBOR + 65 bps [6]	0.76	9	On or after November 28, 2009
Series 4 [5]	Floating Rate Non-Cumulative	November 2005	7,010	30,000	210	3-mo. LIBOR + 75 bps [3]	1.01	9	On or after November 28, 2010
Series 5 [5]	Floating Rate Non-Cumulative	March 2007	14,056	30,000	422	3-mo. LIBOR + 50 bps [3]	1.01	17	On or after May 21, 2012
Issuance costs and certain adjustments					(330)				
Total			**3,939,686**		**$ 24,708**				

(1) The Corporation may redeem series of preferred stock on or after the redemption date, in whole or in part, at its option, at the liquidation preference plus declared and unpaid dividends. Series B and Series L Preferred Stock do not have early redemption/call rights.
(2) Ownership is held in the form of depositary shares, each representing a 1/1,000th interest in a share of preferred stock, paying a quarterly cash dividend, if and when declared.
(3) Subject to 4.00% minimum rate per annum.
(4) Ownership is held in the form of depositary shares, each representing a 1/25th interest in a share of preferred stock, paying a semi-annual cash dividend, if and when declared, until the first redemption date at which time, it adjusts to a quarterly cash dividend, if and when declared, thereafter.
(5) Ownership is held in the form of depositary shares, each representing a 1/1,200th interest in a share of preferred stock, paying a quarterly cash dividend, if and when declared.
(6) Subject to 3.00% minimum rate per annum.
n/a = not applicable

NOTE 14 Accumulated Other Comprehensive Income (Loss)

The table below presents the changes in accumulated OCI after-tax for 2021, 2020 and 2019.

(Dollars in millions)	Debt Securities	Debit Valuation Adjustments	Derivatives	Employee Benefit Plans	Foreign Currency	Total
Balance, December 31, 2018	$ (5,552)	$ (531)	$ (1,016)	$ (4,304)	$ (808)	$ (12,211)
Net change	5,875	(963)	616	136	(86)	5,578
Balance, December 31, 2019	$ 323	$ (1,494)	$ (400)	$ (4,168)	$ (894)	$ (6,633)
Net change	4,799	(498)	826	(98)	(52)	4,977
Balance, December 31, 2020	$ 5,122	$ (1,992)	$ 426	$ (4,266)	$ (946)	$ (1,656)
Net change	**(2,077)**	**356**	**(2,306)**	**624**	**(45)**	**(3,448)**
Balance, December 31, 2021	**$ 3,045**	**$ (1,636)**	**$ (1,880)**	**$ (3,642)**	**$ (991)**	**$ (5,104)**

The table below presents the net change in fair value recorded in accumulated OCI, net realized gains and losses reclassified into earnings and other changes for each component of OCI pre- and after-tax for 2021, 2020 and 2019.

	Pretax	**Tax effect**	**After-tax**	Pretax	Tax effect	After-tax	Pretax	Tax effect	After-tax
(Dollars in millions)		**2021**			2020			2019	
Debt securities:									
Net increase (decrease) in fair value	**$ (2,749)**	**$ 689**	**$ (2,060)**	$ 6,819	$ (1,712)	$ 5,107	$ 8,020	$ (2,000)	$ 6,020
Net realized gains reclassified into earnings [1]	**(22)**	**5**	**(17)**	(411)	103	(308)	(193)	48	(145)
Net change	**(2,771)**	**694**	**(2,077)**	6,408	(1,609)	4,799	7,827	(1,952)	5,875
Debit valuation adjustments:									
Net increase (decrease) in fair value	**449**	**(103)**	**346**	(669)	156	(513)	(1,276)	289	(987)
Net realized losses reclassified into earnings [1]	**13**	**(3)**	**10**	19	(4)	15	18	6	24
Net change	**462**	**(106)**	**356**	(650)	152	(498)	(1,258)	295	(963)
Derivatives:									
Net increase (decrease) in fair value	**(2,849)**	**703**	**(2,146)**	1,098	(268)	830	692	(156)	536
Reclassifications into earnings:									
Net interest income	**(166)**	**48**	**(118)**	6	(1)	5	104	(26)	78
Compensation and benefits expense	**(55)**	**13**	**(42)**	(12)	3	(9)	2	—	2
Net realized (gains) losses reclassified into earnings	**(221)**	**61**	**(160)**	(6)	2	(4)	106	(26)	80
Net change	**(3,070)**	**764**	**(2,306)**	1,092	(266)	826	798	(182)	616
Employee benefit plans:									
Net increase (decrease) in fair value	**463**	**(72)**	**391**	(381)	80	(301)	41	(21)	20
Net actuarial losses and other reclassified into earnings [2]	**295**	**(67)**	**228**	261	(63)	198	150	(36)	114
Settlements, curtailments and other	**5**	**—**	**5**	5	—	5	3	(1)	2
Net change	**763**	**(139)**	**624**	(115)	17	(98)	194	(58)	136
Foreign currency:									
Net increase (decrease) in fair value	**296**	**(341)**	**(45)**	(251)	199	(52)	(13)	(52)	(65)
Net realized (gains) reclassified into earnings [1]	**(5)**	**5**	**—**	(1)	1	—	(110)	89	(21)
Net change	**291**	**(336)**	**(45)**	(252)	200	(52)	(123)	37	(86)
Total other comprehensive income (loss)	**$ (4,325)**	**$ 877**	**$ (3,448)**	$ 6,483	$ (1,506)	$ 4,977	$ 7,438	$ (1,860)	$ 5,578

[1] Reclassifications of pretax debt securities, DVA and foreign currency (gains) losses are recorded in other income in the Consolidated Statement of Income.
[2] Reclassifications of pretax employee benefit plan costs are recorded in other general operating expense in the Consolidated Statement of Income.

NOTE 15 Earnings Per Common Share

The calculation of EPS and diluted EPS for 2021, 2020 and 2019 is presented below. For more information on the calculation of EPS, see *Note 1 – Summary of Significant Accounting Principles*.

(In millions, except per share information)	**2021**	2020	2019
Earnings per common share			
Net income	**$ 31,978**	$ 17,894	$ 27,430
Preferred stock dividends	**(1,421)**	(1,421)	(1,432)
Net income applicable to common shareholders	**$ 30,557**	$ 16,473	$ 25,998
Average common shares issued and outstanding	**8,493.3**	8,753.2	9,390.5
Earnings per common share	**$ 3.60**	$ 1.88	$ 2.77
Diluted earnings per common share			
Net income applicable to common shareholders	**$ 30,557**	$ 16,473	$ 25,998
Average common shares issued and outstanding	**8,493.3**	8,753.2	9,390.5
Dilutive potential common shares [1]	**65.1**	43.7	52.4
Total diluted average common shares issued and outstanding	**8,558.4**	8,796.9	9,442.9
Diluted earnings per common share	**$ 3.57**	$ 1.87	$ 2.75

[1] Includes incremental dilutive shares from preferred stock, RSUs, restricted stock and warrants.

For 2021, 2020 and 2019, 62 million average dilutive potential common shares associated with the Series L preferred stock were not included in the diluted share count because the result would have been antidilutive under the "if-converted" method. For 2019, average warrants to purchase three million shares of common stock, were included in the diluted EPS calculation under the treasury stock method. Substantially all of these warrants were exercised on or before their expiration date of January 16, 2019.

NOTE 16 Regulatory Requirements and Restrictions

The Federal Reserve, Office of the Comptroller of the Currency (OCC) and FDIC (collectively, U.S. banking regulators) jointly establish regulatory capital adequacy rules, including Basel 3, for U.S. banking organizations. As a financial holding company, the Corporation is subject to capital adequacy rules issued by the Federal Reserve. The Corporation's banking entity affiliates are subject to capital adequacy rules issued by the OCC.

The Corporation and its primary banking entity affiliate, BANA, are Advanced approaches institutions under Basel 3. As Advanced approaches institutions, the Corporation and its banking entity affiliates are required to report regulatory risk-based capital ratios and risk-weighted assets under both the Standardized and Advanced approaches. The approach that yields the lower ratio is used to assess capital adequacy, including under the Prompt Corrective Action (PCA) framework.

The Corporation is required to maintain a minimum supplementary leverage ratio (SLR) of 3.0 percent plus a leverage buffer of 2.0 percent in order to avoid certain restrictions on capital distributions and discretionary bonus payments. The Corporation's insured depository institution subsidiaries are required to maintain a minimum 6.0 percent SLR to be considered well capitalized under the PCA framework.

The table below presents capital ratios and related information in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2021 and 2020 for the Corporation and BANA.

Regulatory Capital under Basel 3

	Bank of America Corporation			Bank of America, N.A.		
	Standardized Approach [1]	Advanced Approaches [1]	Regulatory Minimum [2]	Standardized Approach [1]	Advanced Approaches [1]	Regulatory Minimum [3]
(Dollars in millions, except as noted)	December 31, 2021					
Risk-based capital metrics:						
Common equity tier 1 capital	**$ 171,759**	**$ 171,759**		**$ 182,526**	**$ 182,526**	
Tier 1 capital	**196,465**	**196,465**		**182,526**	**182,526**	
Total capital [4]	**227,592**	**220,616**		**194,773**	**188,091**	
Risk-weighted assets (in billions)	**1,618**	**1,399**		**1,352**	**1,048**	
Common equity tier 1 capital ratio	**10.6 %**	**12.3 %**	**9.5 %**	**13.5 %**	**17.4 %**	**7.0 %**
Tier 1 capital ratio	**12.1**	**14.0**	**11.0**	**13.5**	**17.4**	**8.5**
Total capital ratio	**14.1**	**15.8**	**13.0**	**14.4**	**17.9**	**10.5**
Leverage-based metrics:						
Adjusted quarterly average assets (in billions) [5]	**$ 3,087**	**$ 3,087**		**$ 2,414**	**$ 2,414**	
Tier 1 leverage ratio	**6.4 %**	**6.4 %**	**4.0**	**7.6 %**	**7.6 %**	**5.0**
Supplementary leverage exposure (in billions) [6]		**$ 3,604**			**$ 2,824**	
Supplementary leverage ratio		**5.5 %**	**5.0**		**6.5 %**	**6.0**
	December 31, 2020					
Risk-based capital metrics:						
Common equity tier 1 capital	$ 176,660	$ 176,660		$ 164,593	$ 164,593	
Tier 1 capital	200,096	200,096		164,593	164,593	
Total capital [4]	237,936	227,685		181,370	170,922	
Risk-weighted assets (in billions)	1,480	1,371		1,221	1,014	
Common equity tier 1 capital ratio	11.9 %	12.9 %	9.5 %	13.5 %	16.2 %	7.0 %
Tier 1 capital ratio	13.5	14.6	11.0	13.5	16.2	8.5
Total capital ratio	16.1	16.6	13.0	14.9	16.9	10.5
Leverage-based metrics:						
Adjusted quarterly average assets (in billions) [5]	$ 2,719	$ 2,719		$ 2,143	$ 2,143	
Tier 1 leverage ratio	7.4 %	7.4 %	4.0	7.7 %	7.7 %	5.0
Supplementary leverage exposure (in billions) [6]		$ 2,786			$ 2,525	
Supplementary leverage ratio		7.2 %	5.0		6.5 %	6.0

(1) As of December 31, 2021 and 2020, capital ratios are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of the CECL accounting standard.

(2) The capital conservation buffer and global systemically important bank (G-SIB) surcharge were 2.5 percent at both December 31, 2021 and 2020. At December 31, 2021 and 2020 the Corporation's stress capital buffer of 2.5 percent was applied in place of the capital conservation buffer under the Standardized approach. The countercyclical capital buffer for both periods was zero. The CET1 capital regulatory minimum is the sum of the CET1 capital ratio minimum of 4.5 percent, the Corporation's G-SIB surcharge of 2.5 percent and the Corporation's SCB or the capital conservation buffer, as applicable, of 2.5 percent. The SLR regulatory minimum includes a leverage buffer of 2.0 percent.

(3) Risk-based capital regulatory minimums at December 31, 2021 and 2020 are the minimum ratios under Basel 3, including a capital conservation buffer of 2.5 percent. The regulatory minimums for the leverage ratios as of both period ends are the percent required to be considered well capitalized under the PCA framework.

(4) Total capital under the Advanced approaches differs from the Standardized approach due to differences in the amount permitted in Tier 2 capital related to the qualifying allowance for credit losses.

(5) Reflects total average assets adjusted for certain Tier 1 capital deductions.

(6) Supplementary leverage exposure for the Corporation at December 31, 2020 reflects the temporary exclusion of U.S. Treasury securities and deposits at Federal Reserve Banks. The temporary relief expired after March 31, 2021 and is not reflected in supplementary leverage exposure at December 31, 2021.

The capital adequacy rules issued by the U.S. banking regulators require institutions to meet the established minimums outlined in the table above. Failure to meet the minimum requirements can lead to certain mandatory and discretionary actions by regulators that could have a material adverse impact on the Corporation's financial position. At December 31, 2021 and 2020, the Corporation and its banking entity affiliates were well capitalized.

Due to uncertainty from the pandemic, the Federal Reserve imposed various restrictions on share repurchase programs and dividends during 2020 and the first half of 2021. In conjunction with its release of 2021 CCAR supervisory stress test results, the Federal Reserve announced those restrictions would end as of July 1, 2021 for large banks, including the Corporation, and large banks would be subject to the normal restrictions under the Federal Reserve's SCB framework. For more information, see *Note 13 – Shareholders' Equity*.

Other Regulatory Matters

The Federal Reserve requires the Corporation's bank subsidiaries to maintain reserve requirements based on a percentage of certain deposit liabilities. The average daily reserve balance requirements, in excess of vault cash, maintained by the Corporation with the Federal Reserve Bank were $0 for 2021 and $3.8 billion for 2020. At December 31, 2021 and 2020, the Corporation had cash and cash equivalents in the amount of $4.0 billion and $4.9 billion, and securities with a fair value of $10.6 billion and $16.8 billion that were segregated in compliance with securities regulations. Cash held on deposit with the Federal Reserve Bank to meet reserve requirements and cash and cash equivalents segregated in compliance with securities regulations are components of restricted cash. For more information, see *Note 10 – Securities Financing Agreements, Short-term Borrowings and Restricted Cash*. In addition, at December 31, 2021 and 2020, the Corporation had cash deposited with clearing organizations of $28.6 billion and $10.9 billion primarily recorded in other assets on the Consolidated Balance Sheet.

Bank Subsidiary Distributions

The primary sources of funds for cash distributions by the Corporation to its shareholders are capital distributions received from its bank subsidiaries, BANA and Bank of America California, N.A. In 2021, the Corporation received dividends of $15.6 billion from BANA and $29 million from Bank of America California, N.A.

The amount of dividends that a subsidiary bank may declare in a calendar year without OCC approval is the subsidiary bank's net profits for that year combined with its retained net profits for the preceding two years. Retained net profits, as defined by the OCC, consist of net income less dividends declared during the period. In 2022, BANA can declare and pay dividends of approximately $14.7 billion to the Corporation plus an additional amount equal to its retained net profits for 2022 up to the date of any such dividend declaration. Bank of America California, N.A. can pay dividends of $234 million in 2022 plus an additional amount equal to its retained net profits for 2022 up to the date of any such dividend declaration.

NOTE 17 Employee Benefit Plans

Pension and Postretirement Plans

The Corporation sponsors a qualified noncontributory trusteed pension plan (Qualified Pension Plan), a number of noncontributory nonqualified pension plans and postretirement health and life plans that cover eligible employees. Non-U.S. pension plans sponsored by the Corporation vary based on the country and local practices.

The Qualified Pension Plan has a balance guarantee feature for account balances with participant-selected investments, applied at the time a benefit payment is made from the plan that effectively provides principal protection for participant balances transferred and certain compensation credits. The Corporation is responsible for funding any shortfall on the guarantee feature.

Benefits earned under the Qualified Pension Plan have been frozen. Thereafter, the cash balance accounts continue to earn investment credits or interest credits in accordance with the terms of the plan document.

The Corporation has an annuity contract that guarantees the payment of benefits vested under a terminated U.S. pension plan (Other Pension Plan). The Corporation, under a supplemental agreement, may be responsible for or benefit from actual experience and investment performance of the annuity assets. The Corporation made no contribution under this agreement in 2021 or 2020. Contributions may be required in the future under this agreement.

The Corporation's noncontributory, nonqualified pension plans are unfunded and provide supplemental defined pension benefits to certain eligible employees.

In addition to retirement pension benefits, certain benefits-eligible employees may become eligible to continue participation as retirees in health care and/or life insurance plans sponsored by the Corporation. These plans are referred to as the Postretirement Health and Life Plans.

The Pension and Postretirement Plans table summarizes the changes in the fair value of plan assets, changes in the projected benefit obligation (PBO), the funded status of both the accumulated benefit obligation (ABO) and the PBO, and the weighted-average assumptions used to determine benefit obligations for the pension plans and postretirement plans at December 31, 2021 and 2020. The estimate of the Corporation's PBO associated with these plans considers various actuarial assumptions, including assumptions for mortality rates and discount rates. The discount rate assumptions are derived from a cash flow matching technique that utilizes rates that are based on Aa-rated corporate bonds with cash flows that match estimated benefit payments of each of the plans. The increases in the weighted-average discount rates in 2021 resulted in a decrease to the PBO of $895 million at December 31, 2021. The decreases in the weighted-average discount rates in 2020 resulted in an increase to the PBO of approximately $1.9 billion at December 31, 2020. Significant gains and losses related to changes in the PBO for 2021 and 2020 primarily resulted from changes in the discount rate.

Pension and Postretirement Plans [(1)]

(Dollars in millions)	Qualified Pension Plan 2021	Qualified Pension Plan 2020	Non-U.S. Pension Plans 2021	Non-U.S. Pension Plans 2020	Nonqualified and Other Pension Plans 2021	Nonqualified and Other Pension Plans 2020	Postretirement Health and Life Plans 2021	Postretirement Health and Life Plans 2020
Fair value, January 1	$ 21,776	$ 20,275	$ 3,078	$ 2,696	$ 2,789	$ 2,666	$ 143	$ 199
Actual return on plan assets	1,215	2,468	62	379	(55)	285	—	1
Company contributions	—	—	24	23	87	86	38	6
Plan participant contributions	—	—	1	1	—	—	107	110
Settlements and curtailments	—	—	(11)	(61)	—	—	—	—
Benefits paid	(913)	(967)	(84)	(57)	(236)	(248)	(171)	(174)
Federal subsidy on benefits paid	n/a	n/a	n/a	n/a	n/a	n/a	—	1
Foreign currency exchange rate changes	n/a	n/a	(39)	97	n/a	n/a	n/a	n/a
Fair value, December 31	$ 22,078	$ 21,776	$ 3,031	$ 3,078	$ 2,585	$ 2,789	$ 117	$ 143
Change in projected benefit obligation								
Projected benefit obligation, January 1	$ 16,427	$ 15,361	$ 3,340	$ 2,887	$ 3,005	$ 2,919	$ 1,007	$ 989
Service cost	—	—	28	20	—	1	5	5
Interest cost	414	500	45	49	67	90	24	32
Plan participant contributions	—	—	1	1	—	—	107	110
Plan amendments	—	—	—	3	—	—	—	—
Settlements and curtailments	—	—	(11)	(61)	—	—	—	—
Actuarial loss (gain)	(252)	1,533	(152)	396	(83)	243	(44)	43
Benefits paid	(913)	(967)	(84)	(57)	(236)	(248)	(171)	(173)
Federal subsidy on benefits paid	n/a	n/a	n/a	n/a	n/a	n/a	—	1
Foreign currency exchange rate changes	n/a	n/a	(51)	102	n/a	n/a	—	—
Projected benefit obligation, December 31	$ 15,676	$ 16,427	$ 3,116	$ 3,340	$ 2,753	$ 3,005	$ 928	$ 1,007
Amounts recognized on Consolidated Balance Sheet								
Other assets	$ 6,402	$ 5,349	$ 550	$ 428	$ 777	$ 812	$ —	$ —
Accrued expenses and other liabilities	—	—	(635)	(690)	(945)	(1,028)	(811)	(864)
Net amount recognized, December 31	$ 6,402	$ 5,349	$ (85)	$ (262)	$ (168)	$ (216)	$ (811)	$ (864)
Funded status, December 31								
Accumulated benefit obligation	$ 15,676	$ 16,427	$ 3,031	$ 3,253	$ 2,753	$ 3,005	n/a	n/a
Overfunded (unfunded) status of ABO	6,402	5,349	—	(175)	(168)	(216)	n/a	n/a
Provision for future salaries	—	—	85	87	—	—	n/a	n/a
Projected benefit obligation	15,676	16,427	3,116	3,340	2,753	3,005	$ 928	$ 1,007
Weighted-average assumptions, December 31								
Discount rate	2.86 %	2.57 %	1.85 %	1.37 %	2.80 %	2.33 %	2.85 %	2.48 %
Rate of compensation increase	n/a	n/a	4.46	4.11	4.00	4.00	n/a	n/a
Interest-crediting rate	4.83 %	5.02 %	1.90	1.58	4.22	4.49	n/a	n/a

(1) The measurement date for all of the above plans was December 31 of each year reported.
n/a = not applicable

The Corporation's estimate of its contributions to be made to the Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans in 2022 is $30 million, $91 million and $42 million, respectively. The Corporation does not expect to make a contribution to the Qualified Pension Plan in 2022. It is the policy of the Corporation to fund no less than the minimum funding amount required by the Employee Retirement Income Security Act of 1974 (ERISA).

Pension Plans with ABO and PBO in excess of plan assets as of December 31, 2021 and 2020 are presented in the table below. For these plans, funding strategies vary due to legal requirements and local practices.

Plans with ABO and PBO in Excess of Plan Assets

(Dollars in millions)	Non-U.S. Pension Plans 2021	Non-U.S. Pension Plans 2020	Nonqualified and Other Pension Plans 2021	Nonqualified and Other Pension Plans 2020
PBO	$ 841	$ 900	$ 945	$ 1,028
ABO	780	841	945	1,028
Fair value of plan assets	207	211	1	1

Components of Net Periodic Benefit Cost

(Dollars in millions)	Qualified Pension Plan 2021	Qualified Pension Plan 2020	Qualified Pension Plan 2019	Non-U.S. Pension Plans 2021	Non-U.S. Pension Plans 2020	Non-U.S. Pension Plans 2019
Components of net periodic benefit cost (income)						
Service cost	**$ —**	$ —	$ —	**$ 28**	$ 20	$ 17
Interest cost	**414**	500	593	**45**	49	65
Expected return on plan assets	**(1,173)**	(1,154)	(1,088)	**(70)**	(66)	(99)
Amortization of net actuarial loss	**193**	173	135	**19**	9	6
Other	**—**	—	—	**5**	8	4
Net periodic benefit cost (income)	**$ (566)**	$ (481)	$ (360)	**$ 27**	$ 20	$ (7)
Weighted-average assumptions used to determine net cost for years ended December 31						
Discount rate	**2.57 %**	3.32 %	4.32 %	**1.35 %**	1.81 %	2.60 %
Expected return on plan assets	**5.75**	6.00	6.00	**2.30**	2.57	4.13
Rate of compensation increase	**n/a**	n/a	n/a	**4.11**	4.10	4.49

(Dollars in millions)	Nonqualified and Other Pension Plans 2021	Nonqualified and Other Pension Plans 2020	Nonqualified and Other Pension Plans 2019	Postretirement Health and Life Plans 2021	Postretirement Health and Life Plans 2020	Postretirement Health and Life Plans 2019
Components of net periodic benefit cost (income)						
Service cost	**$ —**	$ 1	$ 1	**$ 5**	$ 5	$ 5
Interest cost	**67**	90	113	**24**	32	38
Expected return on plan assets	**(49)**	(71)	(95)	**(3)**	(4)	(5)
Amortization of net actuarial loss (gain)	**63**	50	34	**20**	29	(24)
Other	**—**	—	—	**—**	(2)	(2)
Net periodic benefit cost (income)	**$ 81**	$ 70	$ 53	**$ 46**	$ 60	$ 12
Weighted-average assumptions used to determine net cost for years ended December 31						
Discount rate	**2.33 %**	3.20 %	4.26 %	**2.48 %**	3.27 %	4.25 %
Expected return on plan assets	**1.88**	2.77	3.73	**2.00**	2.00	2.00
Rate of compensation increase	**4.00**	4.00	4.00	**n/a**	n/a	n/a

n/a = not applicable

The asset valuation method used to calculate the expected return on plan assets component of net periodic benefit cost for the Qualified Pension Plan recognizes 60 percent of the prior year's market gains or losses at the next measurement date with the remaining 40 percent spread equally over the subsequent four years.

Gains and losses for all benefit plans except postretirement health care are recognized in accordance with the standard amortization provisions of the applicable accounting guidance. Net periodic postretirement health and life expense was determined using the "projected unit credit" actuarial method. For the Postretirement Health and Life Plans, 50 percent of the unrecognized gain or loss at the beginning of the year (or at subsequent remeasurement) is recognized on a level basis during the year.

Assumed health care cost trend rates affect the postretirement benefit obligation and benefit cost reported for the Postretirement Health and Life Plans. The assumed health care cost trend rate used to measure the expected cost of benefits covered by the Postretirement Health and Life Plans is 6.25 percent for 2022, reducing in steps to 5.00 percent in 2027 and later years.

The Corporation's net periodic benefit cost (income) recognized for the plans is sensitive to the discount rate and expected return on plan assets. For the Qualified Pension Plan, Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans, a 25 bp decline in discount rates and expected return on assets would not have had a significant impact on the net periodic benefit cost for 2021.

Pretax Amounts included in Accumulated OCI and OCI

(Dollars in millions)	Qualified Pension Plan 2021	Qualified Pension Plan 2020	Non-U.S. Pension Plans 2021	Non-U.S. Pension Plans 2020	Nonqualified and Other Pension Plans 2021	Nonqualified and Other Pension Plans 2020	Postretirement Health and Life Plans 2021	Postretirement Health and Life Plans 2020	Total 2021	Total 2020
Net actuarial loss (gain)	**$ 3,425**	$ 3,912	**$ 456**	$ 628	**$ 945**	$ 987	**$ 4**	$ 66	**$ 4,830**	$ 5,593
Prior service cost (credits)	**—**	—	**17**	18	**—**	—	**(3)**	(4)	**14**	14
Amounts recognized in accumulated OCI	**$ 3,425**	$ 3,912	**$ 473**	$ 646	**$ 945**	$ 987	**$ 1**	$ 62	**$ 4,844**	$ 5,607
Current year actuarial loss (gain)	**$ (294)**	$ 219	**$ (154)**	$ 79	**$ 21**	$ 29	**$ (41)**	$ 47	**$ (468)**	$ 374
Amortization of actuarial gain (loss) and prior service cost	**(193)**	(173)	**(19)**	(12)	**(63)**	(50)	**(20)**	(27)	**(295)**	(262)
Current year prior service cost (credit)	**—**	—	**—**	3	**—**	—	**—**	—	**—**	3
Amounts recognized in OCI	**$ (487)**	$ 46	**$ (173)**	$ 70	**$ (42)**	$ (21)	**$ (61)**	$ 20	**$ (763)**	$ 115

Plan Assets

The Qualified Pension Plan has been established as a retirement vehicle for participants, and trusts have been established to secure benefits promised under the Qualified Pension Plan. The Corporation's policy is to invest the trust assets in a prudent manner for the exclusive purpose of providing benefits to participants and defraying reasonable expenses of administration. The Corporation's investment strategy is designed to provide a total return that, over the long term, increases the ratio of assets to liabilities. The strategy attempts to maximize the investment return on assets at a level of risk deemed appropriate by the Corporation while complying with ERISA and any applicable regulations and laws. The investment strategy utilizes asset allocation as a principal determinant for establishing the risk/return profile of the assets. Asset allocation ranges are established, periodically reviewed and adjusted as funding levels and liability characteristics change. Active and passive investment managers are employed to help enhance the risk/return profile of the assets. An additional aspect of the investment strategy used to minimize risk (part of the asset allocation plan) includes matching the exposure of participant-selected investment measures.

The assets of the Non-U.S. Pension Plans are primarily attributable to a U.K. pension plan. This U.K. pension plan's assets are invested prudently so that the benefits promised to members are provided with consideration given to the nature and the duration of the plans' liabilities. The selected asset allocation strategy is designed to achieve a higher return than the lowest risk strategy.

The expected rate of return on plan assets assumption was developed through analysis of historical market returns, historical asset class volatility and correlations, current market conditions, anticipated future asset allocations, the funds' past experience and expectations on potential future market returns. The expected return on plan assets assumption is determined using the calculated market-related value for the Qualified Pension Plan and the Other Pension Plan and the fair value for the Non-U.S. Pension Plans and Postretirement Health and Life Plans. The expected return on plan assets assumption represents a long-term average view of the performance of the assets in the Qualified Pension Plan, the Non-U.S. Pension Plans, the Other Pension Plan, and Postretirement Health and Life Plans, a return that may or may not be achieved during any one calendar year. The Other Pension Plan is invested solely in an annuity contract, which is primarily invested in fixed-income securities structured such that asset maturities match the duration of the plan's obligations.

The target allocations for 2022 by asset category for the Qualified Pension Plan, Non-U.S. Pension Plans, and Nonqualified and Other Pension Plans are presented in the table below. Equity securities for the Qualified Pension Plan include common stock of the Corporation in the amounts of $398 million (1.80 percent of total plan assets) and $274 million (1.26 percent of total plan assets) at December 31, 2021 and 2020.

2022 Target Allocation

	Percentage		
Asset Category	**Qualified Pension Plan**	**Non-U.S. Pension Plans**	**Nonqualified and Other Pension Plans**
Equity securities	15 - 50%	0 - 25%	0 - 5%
Debt securities	45 - 80%	40 - 70%	95 - 100%
Real estate	0 - 10%	0 - 15%	0 - 5%
Other	0 - 5%	10 - 40%	0 - 5%

Fair Value Measurements

For more information on fair value measurements, including descriptions of Level 1, 2 and 3 of the fair value hierarchy and the valuation methods employed by the Corporation, see *Note 1 – Summary of Significant Accounting Principles* and *Note 20 – Fair Value Measurements*. Combined plan investment assets measured at fair value by level and in total at December 31, 2021 and 2020 are summarized in the Fair Value Measurements table.

Fair Value Measurements

(Dollars in millions)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
	December 31, 2021				December 31, 2020			
Money market and interest-bearing cash	**$ 1,339**	**$ —**	**$ —**	**$ 1,339**	$ 1,380	$ —	$ —	$ 1,380
U.S. government and government agency obligations	**4,948**	**934**	**6**	**5,888**	4,590	1,238	7	5,835
Corporate debt	**—**	**4,900**	**—**	**4,900**	—	5,021	—	5,021
Non-U.S. debt securities	**925**	**1,165**	**—**	**2,090**	1,021	1,122	—	2,143
Asset-backed securities	**—**	**1,485**	**—**	**1,485**	—	1,967	—	1,967
Mutual and exchange traded funds	**1,395**	**—**	**—**	**1,395**	1,362	—	—	1,362
Collective investment funds	**—**	**3,419**	**—**	**3,419**	—	3,199	—	3,199
Common and preferred stocks	**4,826**	**—**	**—**	**4,826**	4,438	—	—	4,438
Real estate investment trusts	**87**	**—**	**—**	**87**	73	—	—	73
Participant loans	**—**	**—**	**7**	**7**	—	—	7	7
Other investments [(1)]	**1**	**29**	**630**	**660**	1	29	684	714
Total plan investment assets, at fair value [(2)]	**$ 13,521**	**$ 11,932**	**$ 643**	**$ 26,096**	$ 12,865	$ 12,576	$ 698	$ 26,139

(1) Other investments includes insurance annuity contracts of $612 million and $664 million and other various investments of $48 million and $50 million at December 31, 2021 and 2020.
(2) At December 31, 2021 and 2020, excludes $1.7 billion and $1.6 billion of certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient and are not required to be classified in the fair value hierarchy. Prior period has been revised to conform to current-period presentation.

The Level 3 Fair Value Measurements table presents a reconciliation of all plan investment assets measured at fair value using significant unobservable inputs (Level 3) during 2021, 2020 and 2019.

Level 3 Fair Value Measurements

(Dollars in millions)	Balance January 1	Actual Return on Plan Assets Still Held at the Reporting Date	Purchases, Sales and Settlements	Balance December 31
		2021		
U.S. government and government agency obligations	**$ 7**	**$ —**	**$ (1)**	**$ 6**
Participant Loans	**7**	**—**	**—**	**7**
Other investments	**684**	**(5)**	**(49)**	**630**
Total	**$ 698**	**$ (5)**	**$ (50)**	**$ 643**
		2020		
U.S. government and government agency obligations	$ 8	$ —	$ (1)	$ 7
Participant Loans	8	—	(1)	7
Other investments	628	6	50	684
Total	$ 644	$ 6	$ 48	$ 698
		2019		
U.S. government and government agency obligations	$ 9	$ —	$ (1)	$ 8
Private real estate	5	—	(5)	—
Participant loans	12	—	(4)	8
Other investments	576	6	46	628
Total	$ 602	$ 6	$ 36	$ 644

Projected Benefit Payments

Benefit payments projected to be made from the Qualified Pension Plan, Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans are presented in the table below.

Projected Benefit Payments

(Dollars in millions)	Qualified Pension Plan [(1)]	Non-U.S. Pension Plans [(2)]	Nonqualified and Other Pension Plans [(2)]	Postretirement Health and Life Plans [(3)]
2022	$ 948	$ 134	$ 239	$ 78
2023	938	142	244	74
2024	949	135	225	71
2025	936	142	223	67
2026	941	140	218	64
2027 - 2031	4,395	668	940	275

(1) Benefit payments expected to be made from the plan's assets.
(2) Benefit payments expected to be made from a combination of the plans' and the Corporation's assets.
(3) Benefit payments (net of retiree contributions) expected to be made from a combination of the plans' and the Corporation's assets.

Defined Contribution Plans

The Corporation maintains qualified and non-qualified defined contribution retirement plans. The Corporation recorded expense of $1.2 billion in both 2021 and 2020 and $1.0 billion in 2019 related to the qualified defined contribution plans. At December 31, 2021 and 2020, 173 million and 189 million shares of the Corporation's common stock were held by these plans. Payments to the plans for dividends on common stock were $139 million, $138 million and $133 million in 2021, 2020 and 2019, respectively.

Certain non-U.S. employees are covered under defined contribution pension plans that are separately administered in accordance with local laws.

NOTE 18 Stock-based Compensation Plans

The Corporation administers a number of equity compensation plans, with awards being granted predominantly from the Bank of America Key Employee Equity Plan (KEEP). On April 20, 2021, Bank of America's shareholders approved the amendment and restatement of the KEEP, changing its name to the "Bank of America Corporation Equity Plan" and increasing the number of shares available for grant by 115 million. Subsequent to the amendment and restatement, 715 million shares of the Corporation's common stock are authorized to be used for grants of awards under this plan.

During 2021 and 2020, the Corporation granted 99 million and 86 million RSU awards to certain employees under the KEEP. These RSUs were authorized to settle predominantly in shares of common stock of the Corporation. Certain RSUs will be settled in cash or contain settlement provisions that subject these awards to variable accounting whereby compensation expense is adjusted to fair value based on changes in the share price of the Corporation's common stock up to the settlement date. Of the RSUs granted in 2021 and 2020, 81 million and 29 million will generally vest over four years and 18 million and 57 million will vest over three years. The four-year awards vest primarily in one-fourth increments on each of the first four anniversaries of the grant date while the three-year awards vest primarily in one-third increments on each of the first three anniversaries of the grant date, provided that the employee remains continuously employed with the Corporation during that time, and will be expensed ratably over the vesting period, net of estimated forfeitures, for non-retirement eligible employees based on the grant-date fair value of the shares. Of the RSUs granted in 2021 and 2020 that vest over four years, 27 million and 25 million do not include retirement eligibility. For all other RSUs granted to employees who are retirement eligible, they are deemed authorized as of the beginning of the year preceding the grant date when the incentive award plans are generally approved. As a result, the estimated value is expensed ratably over the year preceding the grant date. The compensation cost for the stock-based plans was $3.0 billion, $2.1 billion and $2.1 billion, and the related income tax benefit was $723 million, $505 million and $511 million for 2021, 2020 and 2019, respectively. At December 31, 2021, there was an estimated $2.3 billion of total unrecognized compensation cost related to certain share-based compensation awards that is expected to be recognized over a period of up to four years, with a weighted-average period of 2.4 years.

Restricted Stock and Restricted Stock Units

The total fair value of restricted stock and restricted stock units vested in 2021, 2020 and 2019 was $2.3 billion, $2.3 billion and $2.6 billion, respectively. The table below presents the status at December 31, 2021 of the share-settled restricted stock and restricted stock units and changes during 2021.

Stock-settled Restricted Stock and Restricted Stock Units

	Shares/Units	Weighted-average Grant Date Fair Value
Outstanding at January 1, 2021	167,953,229	$ 30.60
Granted	96,804,487	32.32
Vested	(69,337,350)	30.19
Canceled	(10,369,524)	32.58
Outstanding at December 31, 2021	**185,050,842**	**31.54**

Cash-settled Restricted Units

At December 31, 2021, approximately two million cash-settled restricted units remain outstanding. In 2021, 2020 and 2019, the amount of cash paid to settle the RSUs that vested was $72 million, $81 million and $84 million, respectively.

NOTE 19 Income Taxes

The components of income tax expense for 2021, 2020 and 2019 are presented in the table below.

Income Tax Expense

(Dollars in millions)	**2021**	2020	2019
Current income tax expense			
U.S. federal	**$ 1,076**	$ 1,092	$ 1,136
U.S. state and local	**775**	1,076	901
Non-U.S.	**985**	670	852
Total current expense	**2,836**	2,838	2,889
Deferred income tax expense			
U.S. federal	**962**	(799)	2,001
U.S. state and local	**491**	(233)	223
Non-U.S.	**(2,291)**	(705)	211
Total deferred expense	**(838)**	(1,737)	2,435
Total income tax expense	**$ 1,998**	$ 1,101	$ 5,324

Total income tax expense does not reflect the tax effects of items that are included in OCI each period. For more information, see *Note 14 – Accumulated Other Comprehensive Income (Loss)*. Other tax effects included in OCI each period resulted in a benefit of $877 million in 2021 and expense of $1.5 billion, and $1.9 billion in 2020 and 2019.

Income tax expense for 2021, 2020 and 2019 varied from the amount computed by applying the statutory income tax rate to income before income taxes. The Corporation's federal statutory tax rate was 21 percent for 2021, 2020 and 2019. A reconciliation of the expected U.S. federal income tax expense, calculated by applying the federal statutory tax rate, to the Corporation's actual income tax expense, and the effective tax rates for 2021, 2020 and 2019 are presented in the following table.

Reconciliation of Income Tax Expense

(Dollars in millions)		2021 Amount	2021 Percent		2020 Amount	2020 Percent		2019 Amount	2019 Percent
Expected U.S. federal income tax expense	$	**7,135**	**21.0 %**	$	3,989	21.0 %	$	6,878	21.0 %
Increase (decrease) in taxes resulting from:									
State tax expense, net of federal benefit		**1,087**	**3.2**		728	3.8		1,283	3.9
Affordable housing/energy/other credits		**(3,795)**	**(11.2)**		(2,869)	(15.1)		(2,365)	(7.2)
Tax law changes		**(2,050)**	**(6.0)**		(699)	(3.7)		—	—
Tax-exempt income, including dividends		**(352)**	**(1.0)**		(346)	(1.8)		(433)	(1.3)
Changes in prior-period UTBs, including interest		**(155)**	**(0.5)**		(41)	(0.2)		(613)	(1.9)
Nondeductible expenses		**206**	**0.6**		324	1.7		290	0.9
Rate differential on non-U.S. earnings		**45**	**0.1**		218	1.1		504	1.5
Other		**(123)**	**(0.3)**		(203)	(1.0)		(220)	(0.6)
Total income tax expense	$	**1,998**	**5.9 %**	$	1,101	5.8 %	$	5,324	16.3 %

The reconciliation of the beginning unrecognized tax benefits (UTB) balance to the ending balance is presented in the table below.

Reconciliation of the Change in Unrecognized Tax Benefits

(Dollars in millions)		2021		2020		2019
Balance, January 1	$	**1,340**	$	1,175	$	2,197
Increases related to positions taken during the current year		**208**		238		238
Increases related to positions taken during prior years [1]		**265**		99		401
Decreases related to positions taken during prior years [1]		**(413)**		(172)		(1,102)
Settlements		**(23)**		—		(541)
Expiration of statute of limitations		**(55)**		—		(18)
Balance, December 31	$	**1,322**	$	1,340	$	1,175

(1) The sum of the positions taken during prior years differs from the $(155) million, $(41) million and $(613) million in the Reconciliation of Income Tax Expense table due to temporary items, state items and jurisdictional offsets, as well as the inclusion of interest in the Reconciliation of Income Tax Expense table.

At December 31, 2021, 2020 and 2019, the balance of the Corporation's UTBs which would, if recognized, affect the Corporation's effective tax rate was $959 million, $976 million and $814 million, respectively. Included in the UTB balance are some items the recognition of which would not affect the effective tax rate, such as the tax effect of certain temporary differences, the portion of gross state UTBs that would be offset by the tax benefit of the associated federal deduction and the portion of gross non-U.S. UTBs that would be offset by tax reductions in other jurisdictions.

It is reasonably possible that the UTB balance may decrease by as much as $398 million during the next 12 months, since resolved items will be removed from the balance whether their resolution results in payment or recognition.

The Corporation recognized interest expense of $32 million and $9 million in 2021 and 2020 and an interest benefit of $19 million in 2019. At December 31, 2021 and 2020, the Corporation's accrual for interest and penalties that related to income taxes, net of taxes and remittances, was $167 million and $130 million.

The Corporation files income tax returns in more than 100 state and non-U.S. jurisdictions each year. The IRS and other tax authorities in countries and states in which the Corporation has significant business operations examine tax returns periodically (continuously in some jurisdictions). The table below summarizes the status of examinations by major jurisdiction for the Corporation and various subsidiaries at December 31, 2021.

Tax Examination Status

	Years under Examination [1]	**Status at December 31 2021**
United States	2017-2021	Field Examination
California	2012-2014	Appeals
California	2015-2017	Field Examination
New York	2016-2018	Field Examination
United Kingdom [2]	2019	Field Examination

(1) All tax years subsequent to the years shown remain subject to examination.
(2) Field examination for tax year 2020 to begin in 2022.

Significant components of the Corporation's net deferred tax assets and liabilities at December 31, 2021 and 2020 are presented in the table below.

Deferred Tax Assets and Liabilities

(Dollars in millions)		December 31 2021		December 31 2020
Deferred tax assets				
Net operating loss carryforwards	$	**9,360**	$	7,717
Allowance for credit losses		**3,097**		4,701
Security, loan and debt valuations		**2,746**		2,571
Lease liability		**2,508**		2,400
Accrued expenses		**1,626**		1,481
Employee compensation and retirement benefits		**1,392**		1,582
Credit carryforwards		**705**		484
Other		**1,160**		1,412
Gross deferred tax assets		**22,594**		22,348
Valuation allowance		**(1,988)**		(2,346)
Total deferred tax assets, net of valuation allowance		**20,606**		20,002
Deferred tax liabilities				
Equipment lease financing		**3,083**		3,101
Right-to-use asset		**2,358**		2,296
Fixed assets		**2,082**		1,957
ESG-related tax credit investments		**1,387**		1,930
Available-for-sale securities		**1,016**		1,701
Other		**1,527**		1,570
Gross deferred tax liabilities		**11,453**		12,555
Net deferred tax assets	$	**9,153**	$	7,447

The table below summarizes the deferred tax assets and related valuation allowances recognized for the net operating loss (NOL) and tax credit carryforwards at December 31, 2021.

Net Operating Loss and Tax Credit Carryforward Deferred Tax Assets

(Dollars in millions)	Deferred Tax Asset	Valuation Allowance	Net Deferred Tax Asset	First Year Expiring
Net operating losses - U.K. [1]	$ 7,713	$ —	**$ 7,713**	None
Net operating losses - other non-U.S.	494	(253)	**241**	Various
Net operating losses - U.S. states [2]	1,153	(610)	**543**	Various
Foreign tax credits	705	(705)	**—**	After 2028

(1) Represents U.K. broker-dealer net operating losses that may be carried forward indefinitely.
(2) The net operating losses and related valuation allowances for U.S. states before considering the benefit of federal deductions were $1.5 billion and $772 million.

Management concluded that no valuation allowance was necessary to reduce the deferred tax assets related to the U.K. NOL carryforwards and U.S. federal and certain state NOL carryforwards since estimated future taxable income will be sufficient to utilize these assets prior to their expiration. The majority of the Corporation's U.K. net deferred tax assets, which consist primarily of NOLs, are expected to be realized by certain subsidiaries over an extended number of years. Management's conclusion is supported by financial results, profit forecasts for the relevant entities and the indefinite period to carry forward NOLs. However, a material change in those estimates could lead management to reassess such valuation allowance conclusions.

At December 31, 2021, U.S. federal income taxes had not been provided on approximately $5.0 billion of temporary differences associated with investments in non-U.S. subsidiaries that are essentially permanent in duration. If the Corporation were to record the associated deferred tax liability, the amount would be approximately $1.0 billion.

NOTE 20 Fair Value Measurements

Under applicable accounting standards, fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The Corporation determines the fair values of its financial instruments under applicable accounting standards that require an entity to maximize the use of observable inputs and minimize the use of unobservable inputs. The Corporation categorizes its financial instruments into three levels based on the established fair value hierarchy and conducts a review of fair value hierarchy classifications on a quarterly basis. Transfers into or out of fair value hierarchy classifications are made if the significant inputs used in the financial models measuring the fair values of the assets and liabilities become unobservable or observable in the current marketplace. For more information regarding the fair value hierarchy and how the Corporation measures fair value, see *Note 1 – Summary of Significant Accounting Principles*. The Corporation accounts for certain financial instruments under the fair value option. For more information, see *Note 21 – Fair Value Option.*

Valuation Techniques

The following sections outline the valuation methodologies for the Corporation's assets and liabilities. While the Corporation believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

During 2021, there were no significant changes to valuation approaches or techniques that had, or are expected to have, a material impact on the Corporation's consolidated financial position or results of operations.

Trading Account Assets and Liabilities and Debt Securities

The fair values of trading account assets and liabilities are primarily based on actively traded markets where prices are based on either direct market quotes or observed transactions. The fair values of debt securities are generally based on quoted market prices or market prices for similar assets. Liquidity is a significant factor in the determination of the fair values of trading account assets and liabilities and debt securities. Market price quotes may not be readily available for some positions such as positions within a market sector where trading activity has slowed significantly or ceased. Some of these instruments are valued using a discounted cash flow model, which estimates the fair value of the securities using internal credit risk, and interest rate and prepayment risk models that incorporate management's best estimate of current key assumptions such as default rates, loss severity and prepayment rates. Principal and interest cash flows are discounted using an observable discount rate for similar instruments with adjustments that management believes a market participant would consider in determining fair value for the specific security. Other instruments are valued using a net asset value approach which considers the value of the underlying securities. Underlying assets are valued using external pricing services, where available, or matrix pricing based on the vintages and ratings. Situations of illiquidity generally are triggered by the market's perception of credit uncertainty regarding a single company or a specific market sector. In these instances, fair value is determined based on limited available market information and other factors, principally from reviewing the issuer's financial statements and changes in credit ratings made by one or more rating agencies.

Derivative Assets and Liabilities

The fair values of derivative assets and liabilities traded in the OTC market are determined using quantitative models that utilize multiple market inputs including interest rates, prices and indices to generate continuous yield or pricing curves and volatility factors to value the position. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services. When third-party pricing services are used, the methods and assumptions are reviewed by the Corporation. Estimation risk is greater for derivative asset and liability positions that are either option-based or have longer maturity

dates where observable market inputs are less readily available, or are unobservable, in which case, quantitative-based extrapolations of rate, price or index scenarios are used in determining fair values. The fair values of derivative assets and liabilities include adjustments for market liquidity, counterparty credit quality and other instrument-specific factors, where appropriate. In addition, the Corporation incorporates within its fair value measurements of OTC derivatives a valuation adjustment to reflect the credit risk associated with the net position. Positions are netted by counterparty, and fair value for net long exposures is adjusted for counterparty credit risk while the fair value for net short exposures is adjusted for the Corporation's own credit risk. The Corporation also incorporates FVA within its fair value measurements to include funding costs on uncollateralized derivatives and derivatives where the Corporation is not permitted to use the collateral it receives. An estimate of severity of loss is also used in the determination of fair value, primarily based on market data.

Loans and Loan Commitments

The fair values of loans and loan commitments are based on market prices, where available, or discounted cash flow analyses using market-based credit spreads of comparable debt instruments or credit derivatives of the specific borrower or comparable borrowers. Results of discounted cash flow analyses may be adjusted, as appropriate, to reflect other market conditions or the perceived credit risk of the borrower.

Mortgage Servicing Rights

The fair values of MSRs are primarily determined using an option-adjusted spread valuation approach, which factors in prepayment risk to determine the fair value of MSRs. This approach consists of projecting servicing cash flows under multiple interest rate scenarios and discounting these cash flows using risk-adjusted discount rates.

Loans Held-for-sale

The fair values of LHFS are based on quoted market prices, where available, or are determined by discounting estimated cash flows using interest rates approximating the Corporation's current origination rates for similar loans adjusted to reflect the inherent credit risk. The borrower-specific credit risk is embedded within the quoted market prices or is implied by considering loan performance when selecting comparables.

Short-term Borrowings and Long-term Debt

The Corporation issues structured liabilities that have coupons or repayment terms linked to the performance of debt or equity securities, interest rates, indices, currencies or commodities. The fair values of these structured liabilities are estimated using quantitative models for the combined derivative and debt portions of the notes. These models incorporate observable and, in some instances, unobservable inputs including security prices, interest rate yield curves, option volatility, currency, commodity or equity rates and correlations among these inputs. The Corporation also considers the impact of its own credit spread in determining the discount rate used to value these liabilities. The credit spread is determined by reference to observable spreads in the secondary bond market.

Securities Financing Agreements

The fair values of certain reverse repurchase agreements, repurchase agreements and securities borrowed transactions are determined using quantitative models, including discounted cash flow models that require the use of multiple market inputs including interest rates and spreads to generate continuous yield or pricing curves, and volatility factors. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services.

Deposits

The fair values of deposits are determined using quantitative models, including discounted cash flow models that require the use of multiple market inputs including interest rates and spreads to generate continuous yield or pricing curves, and volatility factors. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services. The Corporation considers the impact of its own credit spread in the valuation of these liabilities. The credit risk is determined by reference to observable credit spreads in the secondary cash market.

Asset-backed Secured Financings

The fair values of asset-backed secured financings are based on external broker bids, where available, or are determined by discounting estimated cash flows using interest rates approximating the Corporation's current origination rates for similar loans adjusted to reflect the inherent credit risk.

Recurring Fair Value

Assets and liabilities carried at fair value on a recurring basis at December 31, 2021 and 2020, including financial instruments that the Corporation accounts for under the fair value option, are summarized in the following tables.

	December 31, 2021				
	Fair Value Measurements				
(Dollars in millions)	Level 1	Level 2	Level 3	Netting Adjustments [1]	Assets/Liabilities at Fair Value
Assets					
Time deposits placed and other short-term investments	$ 707	$ —	$ —	$ —	$ 707
Federal funds sold and securities borrowed or purchased under agreements to resell	—	150,665	—	—	150,665
Trading account assets:					
U.S. Treasury and government agencies	44,599	803	—	—	45,402
Corporate securities, trading loans and other	—	31,601	2,110	—	33,711
Equity securities	61,425	38,383	190	—	99,998
Non-U.S. sovereign debt	3,822	25,612	396	—	29,830
Mortgage trading loans, MBS and ABS:					
U.S. government-sponsored agency guaranteed	—	25,645	109	—	25,754
Mortgage trading loans, ABS and other MBS	—	10,967	1,418	—	12,385
Total trading account assets [2]	109,846	133,011	4,223	—	247,080
Derivative assets	34,748	310,581	3,133	(313,118)	35,344
AFS debt securities:					
U.S. Treasury and government agencies	198,071	1,074	—	—	199,145
Mortgage-backed securities:					
Agency	—	46,339	—	—	46,339
Agency-collateralized mortgage obligations	—	3,380	—	—	3,380
Non-agency residential	—	267	316	—	583
Commercial	—	19,604	—	—	19,604
Non-U.S. securities	—	11,933	—	—	11,933
Other taxable securities	—	2,690	71	—	2,761
Tax-exempt securities	—	15,381	52	—	15,433
Total AFS debt securities	198,071	100,668	439	—	299,178
Other debt securities carried at fair value:					
U.S. Treasury and government agencies	575	—	—	—	575
Non-agency residential MBS	—	343	242	—	585
Non-U.S. and other securities	2,580	5,155	—	—	7,735
Total other debt securities carried at fair value	3,155	5,498	242	—	8,895
Loans and leases	—	7,071	748	—	7,819
Loans held-for-sale	—	4,138	317	—	4,455
Other assets [3]	7,657	2,915	1,572	—	12,144
Total assets [4]	$ 354,184	$ 714,547	$ 10,674	$ (313,118)	$ 766,287
Liabilities					
Interest-bearing deposits in U.S. offices	$ —	$ 408	$ —	$ —	$ 408
Federal funds purchased and securities loaned or sold under agreements to repurchase	—	139,641	—	—	139,641
Trading account liabilities:					
U.S. Treasury and government agencies	19,826	313	—	—	20,139
Equity securities	41,744	6,491	—	—	48,235
Non-U.S. sovereign debt	10,400	13,781	—	—	24,181
Corporate securities and other	—	8,124	11	—	8,135
Total trading account liabilities	71,970	28,709	11	—	100,690
Derivative liabilities	35,282	314,380	5,795	(317,782)	37,675
Short-term borrowings	—	4,279	—	—	4,279
Accrued expenses and other liabilities	8,359	3,130	—	—	11,489
Long-term debt	—	28,633	1,075	—	29,708
Total liabilities [4]	$ 115,611	$ 519,180	$ 6,881	$ (317,782)	$ 323,890

[1] Amounts represent the impact of legally enforceable master netting agreements and also cash collateral held or placed with the same counterparties.
[2] Includes securities with a fair value of $10.6 billion that were segregated in compliance with securities regulations or deposited with clearing organizations. This amount is included in the parenthetical disclosure on the Consolidated Balance Sheet. Trading account assets also includes certain commodities inventory of $752 million that is accounted for at the lower of cost or net realizable value, which is the current selling price less any costs to sell.
[3] Includes MSRs of $818 million which are classified as Level 3 assets.
[4] Total recurring Level 3 assets were 0.34 percent of total consolidated assets, and total recurring Level 3 liabilities were 0.24 percent of total consolidated liabilities.

(Dollars in millions)	December 31, 2020				
	Fair Value Measurements				
	Level 1	Level 2	Level 3	Netting Adjustments [1]	Assets/Liabilities at Fair Value
Assets					
Time deposits placed and other short-term investments	$ 1,649	$ —	$ —	$ —	$ 1,649
Federal funds sold and securities borrowed or purchased under agreements to resell	—	108,856	—	—	108,856
Trading account assets:					
U.S. Treasury and government agencies	45,219	3,051	—	—	48,270
Corporate securities, trading loans and other	—	22,817	1,359	—	24,176
Equity securities	36,372	31,372	227	—	67,971
Non-U.S. sovereign debt	5,753	20,884	354	—	26,991
Mortgage trading loans, MBS and ABS:					
U.S. government-sponsored agency guaranteed	—	21,566	75	—	21,641
Mortgage trading loans, ABS and other MBS	—	8,440	1,365	—	9,805
Total trading account assets [2]	87,344	108,130	3,380	—	198,854
Derivative assets	15,624	416,175	2,751	(387,371)	47,179
AFS debt securities:					
U.S. Treasury and government agencies	115,266	1,114	—	—	116,380
Mortgage-backed securities:					
Agency	—	61,849	—	—	61,849
Agency-collateralized mortgage obligations	—	5,260	—	—	5,260
Non-agency residential	—	631	378	—	1,009
Commercial	—	16,491	—	—	16,491
Non-U.S. securities	—	13,999	18	—	14,017
Other taxable securities	—	2,640	71	—	2,711
Tax-exempt securities	—	16,598	176	—	16,774
Total AFS debt securities	115,266	118,582	643	—	234,491
Other debt securities carried at fair value:					
U.S. Treasury and government agencies	93	—	—	—	93
Non-agency residential MBS	—	506	267	—	773
Non-U.S. and other securities	2,619	8,625	—	—	11,244
Total other debt securities carried at fair value	2,712	9,131	267	—	12,110
Loans and leases	—	5,964	717	—	6,681
Loans held-for-sale	—	1,349	236	—	1,585
Other assets [3]	9,898	3,850	1,970	—	15,718
Total assets [4]	$ 232,493	$ 772,037	$ 9,964	$ (387,371)	$ 627,123
Liabilities					
Interest-bearing deposits in U.S. offices	$ —	$ 481	$ —	$ —	$ 481
Federal funds purchased and securities loaned or sold under agreements to repurchase	—	135,391	—	—	135,391
Trading account liabilities:					
U.S. Treasury and government agencies	9,425	139	—	—	9,564
Equity securities	38,189	4,235	—	—	42,424
Non-U.S. sovereign debt	5,853	8,043	—	—	13,896
Corporate securities and other	—	5,420	16	—	5,436
Total trading account liabilities	53,467	17,837	16	—	71,320
Derivative liabilities	14,907	412,881	6,219	(388,481)	45,526
Short-term borrowings	—	5,874	—	—	5,874
Accrued expenses and other liabilities	12,297	4,014	—	—	16,311
Long-term debt	—	31,036	1,164	—	32,200
Total liabilities [5]	$ 80,671	$ 607,514	$ 7,399	$ (388,481)	$ 307,103

(1) Amounts represent the impact of legally enforceable master netting agreements and also cash collateral held or placed with the same counterparties.
(2) Includes securities with a fair value of $16.8 billion that were segregated in compliance with securities regulations or deposited with clearing organizations. This amount is included in the parenthetical disclosure on the Consolidated Balance Sheet. Trading account assets also includes certain commodities inventory of $576 million that is accounted for at the lower of cost or net realizable value, which is the current selling price less any costs to sell.
(3) Includes MSRs of $1.0 billion which are classified as Level 3 assets.
(4) Total recurring Level 3 assets were 0.35 percent of total consolidated assets, and total recurring Level 3 liabilities were 0.29 percent of total consolidated liabilities.

The following tables present a reconciliation of all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during 2021, 2020 and 2019, including net realized and unrealized gains (losses) included in earnings and accumulated OCI. Transfers into Level 3 occur primarily due to decreased price observability, and transfers out of Level 3 occur primarily due to increased price observability. Transfers occur on a regular basis for long-term debt instruments due to changes in the impact of unobservable inputs on the value of the embedded derivative in relation to the instrument as a whole.

Level 3 – Fair Value Measurements [1]

(Dollars in millions)	Balance January 1	Total Realized/ Unrealized Gains (Losses) in Net Income [2]	Gains (Losses) in OCI [3]	Gross Purchases	Gross Sales	Gross Issuances	Gross Settlements	Gross Transfers into Level 3	Gross Transfers out of Level 3	Balance December 31	Change in Unrealized Gains (Losses) in Net Income Related to Financial Instruments Still Held [2]
Year Ended December 31, 2021											
Trading account assets:											
Corporate securities, trading loans and other	$ 1,359	$ (17)	$ —	$ 765	$(437)	$ —	$ (327)	$ 1,218	$ (451)	$ 2,110	$ (79)
Equity securities	227	(18)	—	103	(68)	—	—	112	(166)	190	(44)
Non-U.S. sovereign debt	354	31	(20)	18	—	—	(13)	26	—	396	34
Mortgage trading loans, ABS and other MBS	1,440	(58)	—	518	(721)	7	(167)	771	(263)	1,527	(91)
Total trading account assets	3,380	(62)	(20)	1,404	(1,226)	7	(507)	2,127	(880)	4,223	(180)
Net derivative assets (liabilities) [4]	(3,468)	927	—	521	(653)	—	293	(74)	(208)	(2,662)	800
AFS debt securities:											
Non-agency residential MBS	378	(11)	(111)	—	(98)	—	(45)	304	(101)	316	8
Non-U.S. securities	18	(4)	—	—	(10)	—	(4)	—	—	—	—
Other taxable securities	71	—	(7)	8	—	—	—	—	(1)	71	—
Tax-exempt securities	176	20	—	—	—	—	(2)	—	(142)	52	(19)
Total AFS debt securities	643	5	(118)	8	(108)	—	(51)	304	(244)	439	(11)
Other debt securities carried at fair value – Non-agency residential MBS	267	1	—	—	(45)	—	(37)	101	(45)	242	10
Loans and leases [5,6]	717	62	—	59	(13)	70	(180)	46	(13)	748	65
Loans held-for-sale [5,6]	236	13	(6)	132	(1)	—	(79)	26	(4)	317	18
Other assets [6,7]	1,970	7	3	26	(202)	144	(383)	9	(2)	1,572	3
Trading account liabilities – Corporate securities and other	(16)	6	—	—	—	(1)	—	—	—	(11)	—
Long-term debt [5]	(1,164)	(92)	13	(6)	15	(12)	98	(65)	138	(1,075)	(113)
Year Ended December 31, 2020											
Trading account assets:											
Corporate securities, trading loans and other	$ 1,507	$ (138)	$ (1)	$ 430	$(242)	$ 10	$ (282)	$ 639	$ (564)	$ 1,359	$ (102)
Equity securities	239	(43)	—	78	(53)	—	(3)	58	(49)	227	(31)
Non-U.S. sovereign debt	482	45	(46)	76	(61)	—	(39)	150	(253)	354	47
Mortgage trading loans, ABS and other MBS	1,553	(120)	(3)	577	(746)	11	(96)	757	(493)	1,440	(92)
Total trading account assets	3,781	(256)	(50)	1,161	(1,102)	21	(420)	1,604	(1,359)	3,380	(178)
Net derivative assets (liabilities) [4]	(2,538)	(235)	—	120	(646)	—	(112)	(235)	178	(3,468)	(953)
AFS debt securities:											
Non-agency residential MBS	424	(2)	3	23	(54)	—	(44)	158	(130)	378	(2)
Non-U.S. securities	2	1	—	—	(1)	—	(1)	17	—	18	1
Other taxable securities	65	—	—	9	(4)	—	—	1	—	71	—
Tax-exempt securities	108	(21)	3	—	—	—	(169)	265	(10)	176	(20)
Total AFS debt securities	599	(22)	6	32	(59)	—	(214)	441	(140)	643	(21)
Other debt securities carried at fair value – Non-agency residential MBS	299	26	—	—	(180)	—	(24)	190	(44)	267	3
Loans and leases [5,6]	693	(4)	—	145	(76)	22	(161)	98	—	717	9
Loans held-for-sale [5,6]	375	26	(28)	—	(489)	691	(119)	93	(313)	236	(5)
Other assets [6,7]	2,360	(288)	3	178	(4)	224	(506)	5	(2)	1,970	(374)
Trading account liabilities – Equity securities	(2)	1	—	—	—	—	—	—	1	—	—
Trading account liabilities – Corporate securities and other	(15)	8	—	(7)	(3)	—	1	—	—	(16)	—
Long-term debt [5]	(1,149)	(46)	2	(104)	—	(47)	218	(52)	14	(1,164)	(5)

(1) Assets (liabilities). For assets, increase (decrease) to Level 3 and for liabilities, (increase) decrease to Level 3.

(2) Includes gains (losses) reported in earnings in the following income statement line items: Trading account assets/liabilities - predominantly market making and similar activities; Net derivative assets (liabilities) - market making and similar activities and other income; AFS debt securities - other income; Other debt securities carried at fair value - other income; Loans and leases - market making and similar activities and other income; Loans held-for-sale - other income; Other assets - primarily market making and similar activities and other income related to MSRs; Long-term debt - market making and similar activities.

(3) Includes unrealized gains (losses) in OCI on AFS debt securities, foreign currency translation adjustments and the impact of changes in the Corporation's credit spreads on long-term debt accounted for under the fair value option. Amounts include net unrealized losses of $19 million and $41 million related to financial instruments still held at December 31, 2021 and 2020.

(4) Net derivative assets (liabilities) include derivative assets of $3.1 billion and $2.8 billion and derivative liabilities of $5.8 billion and $6.2 billion at December 31, 2021 and 2020.

(5) Amounts represent instruments that are accounted for under the fair value option.

(6) Issuances represent loan originations and MSRs recognized following securitizations or whole-loan sales.

(7) Settlements primarily represent the net change in fair value of the MSR asset due to the recognition of modeled cash flows and the passage of time.

Level 3 – Fair Value Measurements [(1)]

(Dollars in millions)	Balance January 1	Total Realized/ Unrealized Gains (Losses) in Net Income [(2)]	Gains (Losses) in OCI [(3)]	Gross Purchases	Gross Sales	Gross Issuances	Gross Settlements	Gross Transfers into Level 3	Gross Transfers out of Level 3	Balance December 31	Change in Unrealized Gains (Losses) in Net Income Related to Financial Instruments Still Held [(2)]
Year Ended December 31, 2019											
Trading account assets:											
Corporate securities, trading loans and other	$ 1,558	$ 105	$ —	$ 534	$ (390)	$ 18	$ (578)	$ 699	$ (439)	$ 1,507	$ 29
Equity securities	276	(12)	—	38	(87)	—	(9)	79	(46)	239	(18)
Non-U.S. sovereign debt	465	46	(12)	1	—	—	(51)	39	(6)	482	47
Mortgage trading loans, ABS and other MBS	1,635	99	(2)	662	(899)	—	(175)	738	(505)	1,553	26
Total trading account assets	3,934	238	(14)	1,235	(1,376)	18	(813)	1,555	(996)	3,781	84
Net derivative assets (liabilities) [(4,8)]	(935)	(37)	—	298	(837)	—	(97)	147	(1,077)	(2,538)	228
AFS debt securities:											
Non-agency residential MBS	597	13	64	—	(73)	—	(40)	206	(343)	424	—
Non-U.S. securities	2	—	—	—	—	—	—	—	—	2	—
Other taxable securities	7	2	—	—	—	—	(5)	61	—	65	—
Tax-exempt securities	—	—	—	—	—	—	—	108	—	108	—
Total AFS debt securities	606	15	64	—	(73)	—	(45)	375	(343)	599	—
Other debt securities carried at fair value - Non-agency residential MBS	172	36	—	—	—	—	(17)	155	(47)	299	38
Loans and leases [(5,6)]	338	—	—	230	(35)	217	(57)	—	—	693	(1)
Loans held-for-sale [(5,6)]	542	48	(6)	12	(71)	36	(245)	59	—	375	22
Other assets [(6,7)]	2,932	(81)	19	—	(10)	179	(683)	5	(1)	2,360	(267)
Trading account liabilities – Equity securities	—	(2)	—	—	—	—	—	—	—	(2)	(2)
Trading account liabilities – Corporate securities and other	(18)	8	—	(1)	(3)	(1)	—	—	—	(15)	—
Long-term debt [(5,8)]	(817)	(59)	(64)	—	—	(40)	180	(350)	1	(1,149)	(55)

(1) Assets (liabilities). For assets, increase (decrease) to Level 3 and for liabilities, (increase) decrease to Level 3.

(2) Includes gains/losses reported in earnings in the following income statement line items: Trading account assets/liabilities - predominantly market making and similar activities; Net derivative assets (liabilities) - market making and similar activities and other income; AFS debt securities - predominantly other income; Other debt securities carried at fair value - other income; Loans and leases - market making and similar activities and other income; Loans held-for-sale - other income; Other assets - primarily other income related to MSRs; Long-term debt - market making and similar activities.

(3) Includes unrealized gains (losses) in OCI on AFS debt securities, foreign currency translation adjustments and the impact of changes in the Corporation's credit spreads on long-term debt accounted for under the fair value option. Amounts include net unrealized gains of $3 million related to financial instruments still held at December 31, 2019.

(4) Net derivative assets (liabilities) include derivative assets of $2.2 billion and derivative liabilities of $4.8 billion at December 31, 2019.

(5) Amounts represent instruments that are accounted for under the fair value option.

(6) Issuances represent loan originations and MSRs recognized following securitizations or whole-loan sales.

(7) Settlements primarily represent the net change in fair value of the MSR asset due to the recognition of modeled cash flows and the passage of time.

(8) Transfers into long-term debt include a $1.4 billion transfer in of Level 3 derivative assets to reflect the Corporation's change to present bifurcated embedded derivatives with their respective host instruments.

The following tables present information about significant unobservable inputs related to the Corporation's material categories of Level 3 financial assets and liabilities at December 31, 2021 and 2020.

Quantitative Information about Level 3 Fair Value Measurements at December 31, 2021

(Dollars in millions)

Financial Instrument	Fair Value	Valuation Technique	Inputs: Significant Unobservable Inputs	Inputs: Ranges of Inputs	Inputs: Weighted Average [1]
Loans and Securities [2]					
Instruments backed by residential real estate assets	**$ 1,269**	Discounted cash flow, Market comparables	Yield	0% to 25%	6%
Trading account assets – Mortgage trading loans, ABS and other MBS	338		Prepayment speed	1% to 40% CPR	19% CPR
Loans and leases	373		Default rate	0% to 3% CDR	1% CDR
AFS debt securities – Non-agency residential	316		Price	$0 to $168	$92
Other debt securities carried at fair value – Non-agency residential	242		Loss severity	0% to 43%	13%
Instruments backed by commercial real estate assets	**$ 298**	Discounted cash flow	Yield	0% to 25%	4%
Trading account assets – Corporate securities, trading loans and other	138		Price	$0 to $101	$57
Trading account assets – Mortgage trading loans, ABS and other MBS	77				
AFS debt securities – Other taxable securities	71				
Loans held-for-sale	12				
Commercial loans, debt securities and other	**$ 4,212**	Discounted cash flow, Market comparables	Yield	0% to 19%	10%
Trading account assets – Corporate securities, trading loans and other	1,972		Prepayment speed	10% to 20%	16%
Trading account assets – Non-U.S. sovereign debt	396		Default rate	3% to 4%	4%
Trading account assets – Mortgage trading loans, ABS and other MBS	1,112		Loss severity	35% to 40%	37%
AFS debt securities – Tax-exempt securities	52		Price	$0 to $189	$73
Loans and leases	375		Long-dated equity volatilities	45%	n/a
Loans held-for-sale	305				
Other assets, primarily auction rate securities	**$ 754**	Discounted cash flow, Market comparables	Price	$10 to $96	$91
			Discount rate	9%	n/a
MSRs	**$ 818**	Discounted cash flow	Weighted-average life, fixed rate [5]	0 to 14 years	4 years
			Weighted-average life, variable rate [5]	0 to 10 years	3 years
			Option-adjusted spread, fixed rate	7% to 14%	9%
			Option-adjusted spread, variable rate	9% to 15%	12%
Structured liabilities					
Long-term debt	**$ (1,075)**	Discounted cash flow, Market comparables, Industry standard derivative pricing [3]	Yield	0% to 19%	18%
			Equity correlation	3% to 100%	80%
			Long-dated equity volatilities	5% to 78%	36%
			Price	$0 to $125	$82
			Natural gas forward price	$2/MMBtu to $8/MMBtu	$4 /MMBtu
Net derivative assets (liabilities)					
Credit derivatives	**$ (104)**	Discounted cash flow, Stochastic recovery correlation model	Credit spreads	7 to 155 bps	61 bps
			Upfront points	16 to 100 points	68 points
			Prepayment speed	15% CPR	n/a
			Default rate	2% CDR	n/a
			Credit correlation	20% to 60%	55%
			Price	$0 to $120	$53
Equity derivatives	**$ (1,710)**	Industry standard derivative pricing [3]	Equity correlation	3% to 100%	80%
			Long-dated equity volatilities	5% to 78%	36%
Commodity derivatives	**$ (976)**	Discounted cash flow, Industry standard derivative pricing [3]	Natural gas forward price	$2/MMBtu to $8/MMBtu	$4 /MMBtu
			Correlation	65% to 85%	76%
			Power forward price	$11 to $103	$32
			Volatilities	41% to 69%	63%
Interest rate derivatives	**$ 128**	Industry standard derivative pricing [4]	Correlation (IR/IR)	(1)% to 90%	54%
			Correlation (FX/IR)	(1)% to 58%	44%
			Long-dated inflation rates	(10)% to 11%	3%
			Long-dated inflation volatilities	0% to 2%	2%
			Interest rate volatilities	0% to 2%	1%
Total net derivative assets (liabilities)	**$ (2,662)**				

(1) For loans and securities, structured liabilities and net derivative assets (liabilities), the weighted average is calculated based upon the absolute fair value of the instruments.

(2) The categories are aggregated based upon product type which differs from financial statement classification. The following is a reconciliation to the line items in the table on page 191: Trading account assets – Corporate securities, trading loans and other of $2.1 billion, Trading account assets – Non-U.S. sovereign debt of $396 million, Trading account assets – Mortgage trading loans, MBS and ABS of $1.5 billion, AFS debt securities of $439 million, Other debt securities carried at fair value - Non-agency residential of $242 million, Other assets, including MSRs, of $1.6 billion, Loans and leases of $748 million and LHFS of $317 million.

(3) Includes models such as Monte Carlo simulation and Black-Scholes.

(4) Includes models such as Monte Carlo simulation, Black-Scholes and other methods that model the joint dynamics of interest, inflation and foreign exchange rates.

(5) The weighted-average life is a product of changes in market rates of interest, prepayment rates and other model and cash flow assumptions.

CPR = Constant Prepayment Rate
CDR = Constant Default Rate
MMBtu = Million British thermal units
IR = Interest Rate
FX = Foreign Exchange
n/a = not applicable

Quantitative Information about Level 3 Fair Value Measurements at December 31, 2020

(Dollars in millions)

Financial Instrument	Fair Value	Valuation Technique	Inputs: Significant Unobservable Inputs	Inputs: Ranges of Inputs	Inputs: Weighted Average [1]
Loans and Securities [2]					
Instruments backed by residential real estate assets	$ 1,543	Discounted cash flow, Market comparables	Yield	(3)% to 25%	6%
Trading account assets – Mortgage trading loans, ABS and other MBS	467		Prepayment speed	1% to 56% CPR	20% CPR
Loans and leases	431		Default rate	0% to 3% CDR	1% CDR
AFS debt securities - Non-agency residential	378		Price	$0 to $168	$110
Other debt securities carried at fair value - Non-agency residential	267		Loss severity	0% to 47%	18%
Instruments backed by commercial real estate assets	$ 407	Discounted cash flow	Yield	0% to 25%	4%
Trading account assets – Corporate securities, trading loans and other	262		Price	$0 to $100	$52
Trading account assets – Mortgage trading loans, ABS and other MBS	43				
AFS debt securities, primarily other taxable securities	89				
Loans held-for-sale	13				
Commercial loans, debt securities and other	$ 3,066	Discounted cash flow, Market comparables	Yield	0% to 26%	9%
Trading account assets – Corporate securities, trading loans and other	1,097		Prepayment speed	10% to 20%	14%
Trading account assets – Non-U.S. sovereign debt	354		Default rate	3% to 4%	4%
Trading account assets – Mortgage trading loans, ABS and other MBS	930		Loss severity	35% to 40%	38%
AFS debt securities – Tax-exempt securities	176		Price	$0 to $142	$66
Loans and leases	286		Long-dated equity volatilities	77%	n/a
Loans held-for-sale	223				
Other assets, primarily auction rate securities	$ 937	Discounted cash flow, Market comparables	Price	$10 to $97	$91
			Discount rate	8%	n/a
MSRs	$ 1,033	Discounted cash flow	Weighted-average life, fixed rate [5]	0 to 13 years	4 years
			Weighted-average life, variable rate [5]	0 to 10 years	3 years
			Option-adjusted spread, fixed rate	7% to 14%	9%
			Option-adjusted spread, variable rate	9% to 15%	12%
Structured liabilities					
Long-term debt	$ (1,164)	Discounted cash flow, Market comparables, Industry standard derivative pricing [3]	Yield	0% to 11%	9%
			Equity correlation	2% to 100%	64%
			Long-dated equity volatilities	7% to 64%	32%
			Price	$0 to $124	$86
			Natural gas forward price	$1/MMBtu to $4/MMBtu	$3/MMBtu
Net derivative assets (liabilities)					
Credit derivatives	$ (112)	Discounted cash flow, Stochastic recovery correlation model	Yield	5%	n/a
			Upfront points	0 to 100 points	75 points
			Prepayment speed	15% to 100% CPR	22% CPR
			Default rate	2% CDR	n/a
			Credit correlation	21% to 64%	57%
			Price	$0 to $122	$69
Equity derivatives	$ (1,904)	Industry standard derivative pricing [3]	Equity correlation	2% to 100%	64%
			Long-dated equity volatilities	7% to 64%	32%
Commodity derivatives	$ (1,426)	Discounted cash flow, Industry standard derivative pricing [3]	Natural gas forward price	$1/MMBtu to $4/MMBtu	$3/MMBtu
			Correlation	39% to 85%	73%
			Volatilities	23% to 70%	39%
Interest rate derivatives	$ (26)	Industry standard derivative pricing [4]	Correlation (IR/IR)	15% to 96%	34%
			Correlation (FX/IR)	0% to 46%	3%
			Long-dated inflation rates	(7)% to 84%	14%
			Long-dated inflation volatilities	0% to 1%	1%
			Interest rates volatilities	0% to 2%	1%
Total net derivative assets (liabilities)	$ (3,468)				

[1] For loans and securities, structured liabilities and net derivative assets (liabilities), the weighted average is calculated based upon the absolute fair value of the instruments.

[2] The categories are aggregated based upon product type which differs from financial statement classification. The following is a reconciliation to the line items in the table on page 192: Trading account assets – Corporate securities, trading loans and other of $1.4 billion, Trading account assets – Non-U.S. sovereign debt of $354 million, Trading account assets – Mortgage trading loans, MBS and ABS of $1.4 billion, AFS debt securities of $643 million, Other debt securities carried at fair value - Non-agency residential of $267 million, Other assets, including MSRs, of $2.0 billion, Loans and leases of $717 million and LHFS of $236 million.

[3] Includes models such as Monte Carlo simulation and Black-Scholes.

[4] Includes models such as Monte Carlo simulation, Black-Scholes and other methods that model the joint dynamics of interest, inflation and foreign exchange rates.

[5] The weighted-average life is a product of changes in market rates of interest, prepayment rates and other model and cash flow assumptions.

CPR = Constant Prepayment Rate
CDR = Constant Default Rate
MMBtu = Million British thermal units
IR = Interest Rate
FX = Foreign Exchange
n/a = not applicable

In the previous tables, instruments backed by residential and commercial real estate assets include RMBS, commercial MBS, whole loans and mortgage CDOs. Commercial loans, debt securities and other include corporate CLOs and CDOs, commercial loans and bonds, and securities backed by non-real estate assets. Structured liabilities primarily include equity-linked notes that are accounted for under the fair value option.

The Corporation uses multiple market approaches in valuing certain of its Level 3 financial instruments. For example, market comparables and discounted cash flows are used together. For a given product, such as corporate debt securities, market comparables may be used to estimate some of the unobservable inputs and then these inputs are incorporated into a discounted cash flow model. Therefore, the balances disclosed encompass both of these techniques.

The levels of aggregation and diversity within the products disclosed in the tables result in certain ranges of inputs being wide and unevenly distributed across asset and liability categories.

Uncertainty of Fair Value Measurements from Unobservable Inputs

Loans and Securities

A significant increase in market yields, default rates, loss severities or duration would have resulted in a significantly lower fair value for long positions. Short positions would have been impacted in a directionally opposite way. The impact of changes in prepayment speeds would have resulted in differing impacts depending on the seniority of the instrument and, in the case of CLOs, whether prepayments can be reinvested. A significant increase in price would have resulted in a significantly higher fair value for long positions, and short positions would have been impacted in a directionally opposite way.

Structured Liabilities and Derivatives

For credit derivatives, a significant increase in market yield, upfront points (i.e., a single upfront payment made by a protection buyer at inception), credit spreads, default rates or loss severities would have resulted in a significantly lower fair value for protection sellers and higher fair value for protection buyers. The impact of changes in prepayment speeds would have resulted in differing impacts depending on the seniority of the instrument.

Structured credit derivatives are impacted by credit correlation. Default correlation is a parameter that describes the degree of dependence among credit default rates within a credit portfolio that underlies a credit derivative instrument. The sensitivity of this input on the fair value varies depending on the level of subordination of the tranche. For senior tranches that are net purchases of protection, a significant increase in default correlation would have resulted in a significantly higher fair value. Net short protection positions would have been impacted in a directionally opposite way.

For equity derivatives, commodity derivatives, interest rate derivatives and structured liabilities, a significant change in long-dated rates and volatilities and correlation inputs (i.e., the degree of correlation between an equity security and an index, between two different commodities, between two different interest rates, or between interest rates and foreign exchange rates) would have resulted in a significant impact to the fair value; however, the magnitude and direction of the impact depend on whether the Corporation is long or short the exposure. For structured liabilities, a significant increase in yield or decrease in price would have resulted in a significantly lower fair value.

Nonrecurring Fair Value

The Corporation holds certain assets that are measured at fair value only in certain situations (e.g., the impairment of an asset), and these measurements are referred to herein as nonrecurring. The amounts below represent assets still held as of the reporting date for which a nonrecurring fair value adjustment was recorded during 2021, 2020 and 2019.

Assets Measured at Fair Value on a Nonrecurring Basis

	December 31, 2021		December 31, 2020	
(Dollars in millions)	**Level 2**	**Level 3**	Level 2	Level 3
Assets				
Loans held-for-sale	**$ 634**	**$ 24**	$ 1,020	$ 792
Loans and leases [1]	**—**	**213**	—	301
Foreclosed properties [2, 3]	**—**	**5**	—	17
Other assets	**256**	**2,046**	323	576

	Gains (Losses)		
	2021	2020	2019
Assets			
Loans held-for-sale	**$ (44)**	$ (79)	$ (14)
Loans and leases [1]	**(60)**	(73)	(81)
Foreclosed properties	**(2)**	(6)	(9)
Other assets	**(492)**	(98)	(2,145)

(1) Includes $24 million, $30 million and $36 million of losses on loans that were written down to a collateral value of zero during 2021, 2020 and 2019, respectively.
(2) Amounts are included in other assets on the Consolidated Balance Sheet and represent the carrying value of foreclosed properties that were written down subsequent to their initial classification as foreclosed properties. Losses on foreclosed properties include losses recorded during the first 90 days after transfer of a loan to foreclosed properties.
(3) Excludes $52 million and $119 million of properties acquired upon foreclosure of certain government-guaranteed loans (principally FHA-insured loans) at December 31, 2021 and 2020.

The table below presents information about significant unobservable inputs utilized in the Corporation's nonrecurring Level 3 fair value measurements at December 31, 2021 and 2020.

Quantitative Information about Nonrecurring Level 3 Fair Value Measurements

			Inputs		
Financial Instrument	**Fair Value**	**Valuation Technique**	**Significant Unobservable Inputs**	**Ranges of Inputs**	**Weighted Average** (1)
(Dollars in millions)			**Year Ended December 31, 2021**		
Loans and leases (2)	**$ 213**	Market comparables	OREO discount	13% to 59%	24%
			Costs to sell	8% to 26%	9%
Other assets (3)	**1,875**	Discounted cash flow	Discount rate	7%	n/a
	166	Market comparables	Estimated appraisal value	n/a	n/a
			Year Ended December 31, 2020		
Loans held-for-sale	$ 792	Discounted cash flow	Price	$8 to $99	$95
Loans and leases (2)	301	Market comparables	OREO discount	13% to 59%	24%
			Costs to sell	8% to 26%	9%
Other assets (4)	576	Discounted cash flow	Revenue attrition	2% to 19%	7%
			Discount rate	11% to 14%	12%

(1) The weighted average is calculated based upon the fair value of the loans.
(2) Represents residential mortgages where the loan has been written down to the fair value of the underlying collateral.
(3) Represents the fair value of certain impaired renewable energy investments and impaired assets related to the Corporation's real estate rationalization.
(4) Represents the fair value of the intangible asset related to the merchant contracts received from the dissolution of the Corporation's merchant services joint venture.
n/a = not applicable

NOTE 21 Fair Value Option

Loans and Loan Commitments

The Corporation elects to account for certain loans and loan commitments that exceed the Corporation's single-name credit risk concentration guidelines under the fair value option. Lending commitments are actively managed and, as appropriate, credit risk for these lending relationships may be mitigated through the use of credit derivatives, with the Corporation's public side credit view and market perspectives determining the size and timing of the hedging activity. These credit derivatives do not meet the requirements for designation as accounting hedges and are carried at fair value. The fair value option allows the Corporation to carry these loans and loan commitments at fair value, which is more consistent with management's view of the underlying economics and the manner in which they are managed. In addition, the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the credit derivatives at fair value.

Loans Held-for-sale

The Corporation elects to account for residential mortgage LHFS, commercial mortgage LHFS and certain other LHFS under the fair value option. These loans are actively managed and monitored and, as appropriate, certain market risks of the loans may be mitigated through the use of derivatives. The Corporation has elected not to designate the derivatives as qualifying accounting hedges, and therefore, they are carried at fair value. The changes in fair value of the loans are largely offset by changes in the fair value of the derivatives. The fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at the lower of cost or fair value and the derivatives at fair value. The Corporation has not elected to account for certain other LHFS under the fair value option primarily because these loans are floating-rate loans that are not hedged using derivative instruments.

Loans Reported as Trading Account Assets

The Corporation elects to account for certain loans that are held for the purpose of trading and are risk-managed on a fair value basis under the fair value option.

Other Assets

The Corporation elects to account for certain long-term fixed-rate margin loans that are hedged with derivatives under the fair value option. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the derivatives at fair value.

Securities Financing Agreements

The Corporation elects to account for certain securities financing agreements, including resale and repurchase agreements, under the fair value option. These elections include certain agreements collateralized by the U.S. government and its agencies, which are generally short-dated and have minimal interest rate risk.

Long-term Deposits

The Corporation elects to account for certain long-term fixed-rate and rate-linked deposits that are hedged with derivatives that do not qualify for hedge accounting. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the derivatives at fair value. The Corporation has not elected to carry other long-term deposits at fair value because they are not hedged using derivatives.

Short-term Borrowings

The Corporation elects to account for certain short-term borrowings, primarily short-term structured liabilities, under the fair value option because this debt is risk-managed on a fair value basis.

The Corporation also elects to account for certain asset-backed secured financings, which are also classified in short-term borrowings, under the fair value option. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the asset-backed secured financings at historical cost and the corresponding mortgage LHFS securing these financings at fair value.

Long-term Debt

The Corporation elects to account for certain long-term debt, primarily structured liabilities, under the fair value option. This long-term debt is either risk-managed on a fair value basis or the related hedges do not qualify for hedge accounting.

Fair Value Option Elections

The following tables provide information about the fair value carrying amount and the contractual principal outstanding of assets and liabilities accounted for under the fair value option at December 31, 2021 and 2020, and information about where changes in the fair value of assets and liabilities accounted for under the fair value option are included in the Consolidated Statement of Income for 2021, 2020 and 2019.

Fair Value Option Elections

	December 31, 2021			December 31, 2020		
(Dollars in millions)	Fair Value Carrying Amount	Contractual Principal Outstanding	Fair Value Carrying Amount Less Unpaid Principal	Fair Value Carrying Amount	Contractual Principal Outstanding	Fair Value Carrying Amount Less Unpaid Principal
Federal funds sold and securities borrowed or purchased under agreements to resell	$ 150,665	$ 150,677	$ (12)	$ 108,856	$ 108,811	$ 45
Loans reported as trading account assets [1]	10,864	18,895	(8,031)	7,967	17,372	(9,405)
Trading inventory – other	21,986	n/a	n/a	22,790	n/a	n/a
Consumer and commercial loans	7,819	7,888	(69)	6,681	6,778	(97)
Loans held-for-sale [1]	4,455	5,343	(888)	1,585	2,521	(936)
Other assets	544	n/a	n/a	200	n/a	n/a
Long-term deposits	408	401	7	481	448	33
Federal funds purchased and securities loaned or sold under agreements to repurchase	139,641	139,682	(41)	135,391	135,390	1
Short-term borrowings	4,279	4,127	152	5,874	5,178	696
Unfunded loan commitments	97	n/a	n/a	99	n/a	n/a
Long-term debt	29,708	30,903	(1,195)	32,200	33,470	(1,270)

(1) A significant portion of the loans reported as trading account assets and LHFS are distressed loans that were purchased at a deep discount to par, and the remainder are loans with a fair value near contractual principal outstanding.

n/a = not applicable

Gains (Losses) Related to Assets and Liabilities Accounted for Under the Fair Value Option

(Dollars in millions)	Market making and similar activities	Other Income	Total
		2021	
Loans reported as trading account assets	**$ 275**	**$ —**	**$ 275**
Trading inventory – other [1]	**(211)**	**—**	**(211)**
Consumer and commercial loans	**78**	**40**	**118**
Loans held-for-sale [2]	**—**	**58**	**58**
Short-term borrowings	**883**	**—**	**883**
Long-term debt [3]	**(604)**	**(41)**	**(645)**
Other [4]	**18**	**(23)**	**(5)**
Total [5]	**$ 439**	**$ 34**	**$ 473**
		2020	
Loans reported as trading account assets	$ 107	$ —	$ 107
Trading inventory – other [1]	3,216	—	3,216
Consumer and commercial loans	22	(3)	19
Loans held-for-sale [2]	—	103	103
Short-term borrowings	(170)	—	(170)
Unfunded loan commitments	—	(65)	(65)
Long-term debt [3]	(2,175)	(53)	(2,228)
Other [4]	35	(22)	13
Total [5]	$ 1,035	$ (40)	$ 995
		2019	
Loans reported as trading account assets	$ 203	$ —	$ 203
Trading inventory – other [1]	5,795	—	5,795
Consumer and commercial loans	92	12	104
Loans held-for-sale [2]	—	98	98
Short-term borrowings	(24)	—	(24)
Unfunded loan commitments	—	79	79
Long-term debt [3]	(1,098)	(78)	(1,176)
Other [4]	9	(27)	(18)
Total [5]	$ 4,977	$ 84	$ 5,061

(1) The gains (losses) in market making and similar activities are primarily offset by (losses) gains on trading liabilities that hedge these assets.
(2) Includes the value of IRLCs on funded loans, including those sold during the period.
(3) The net losses in market making and similar activities relate to the embedded derivatives in structured liabilities and are typically offset by gains on derivatives and securities that hedge these liabilities. For the cumulative impact of changes in the Corporation's own credit spreads and the amount recognized in accumulated OCI, see *Note 14 – Accumulated Other Comprehensive Income (Loss)*. For more information on how the Corporation's own credit spread is determined, see *Note 20 – Fair Value Measurements.*
(4) Includes gains (losses) on federal funds sold and securities borrowed or purchased under agreements to resell, other assets, long-term deposits and federal funds purchased and securities loaned or sold under agreements to repurchase.
(5) Gains (losses) related to borrower-specific credit risk were $162 million, $(361) million and $194 million in 2021, 2020 and 2019, respectively.

NOTE 22 Fair Value of Financial Instruments

Financial instruments are classified within the fair value hierarchy using the methodologies described in *Note 20 – Fair Value Measurements*. Certain loans, deposits, long-term debt, unfunded lending commitments and other financial instruments are accounted for under the fair value option. For more information, see *Note 21 – Fair Value Option*. The following disclosures include financial instruments that are not carried at fair value or only a portion of the ending balance is carried at fair value on the Consolidated Balance Sheet.

Short-term Financial Instruments

The carrying value of short-term financial instruments, including cash and cash equivalents, certain time deposits placed and other short-term investments, federal funds sold and purchased, certain resale and repurchase agreements and short-term borrowings, approximates the fair value of these instruments. These financial instruments generally expose the Corporation to limited credit risk and have no stated maturities or have short-term maturities and carry interest rates that approximate market. The Corporation accounts for certain resale and repurchase agreements under the fair value option.

Under the fair value hierarchy, cash and cash equivalents are classified as Level 1. Time deposits placed and other short-term investments, such as U.S. government securities and short-term commercial paper, are classified as Level 1 or Level 2. Federal funds sold and purchased are classified as Level 2. Resale and repurchase agreements are classified as Level 2 because they are generally short-dated and/or variable-rate instruments collateralized by U.S. government or agency securities. Short-term borrowings are classified as Level 2.

Fair Value of Financial Instruments

The carrying values and fair values by fair value hierarchy of certain financial instruments where only a portion of the ending balance was carried at fair value at December 31, 2021 and 2020 are presented in the following table.

Fair Value of Financial Instruments

	Carrying Value	Fair Value Level 2	Fair Value Level 3	Fair Value Total
(Dollars in millions)	December 31, 2021			
Financial assets				
Loans	**$ 946,142**	**$ 53,544**	**$ 919,980**	**$ 973,524**
Loans held-for-sale	**15,635**	**15,016**	**627**	**15,643**
Financial liabilities				
Deposits (1)	**2,064,446**	**2,064,438**	**—**	**2,064,438**
Long-term debt	**280,117**	**286,802**	**1,288**	**288,090**
Commercial unfunded lending commitments (2)	**1,554**	**97**	**6,384**	**6,481**
	December 31, 2020			
Financial assets				
Loans	$ 887,289	$ 49,372	$ 877,682	$ 927,054
Loans held-for-sale	9,243	7,864	1,379	9,243
Financial liabilities				
Deposits (1)	1,795,480	1,795,545	—	1,795,545
Long-term debt	262,934	271,315	1,164	272,479
Commercial unfunded lending commitments (2)	1,977	99	5,159	5,258

(1) Includes demand deposits of $1.0 trillion and $799.0 billion with no stated maturities at December 31, 2021 and 2020.

(2) The carrying value of commercial unfunded lending commitments is included in accrued expenses and other liabilities on the Consolidated Balance Sheet. The Corporation does not estimate the fair value of consumer unfunded lending commitments because, in many instances, the Corporation can reduce or cancel these commitments by providing notice to the borrower. For more information on commitments, see *Note 12 – Commitments and Contingencies*.

NOTE 23 Business Segment Information

The Corporation reports its results of operations through the following four business segments: *Consumer Banking*, *GWIM Global Banking* and *Global Markets*, with the remaining operations recorded in *All Other*.

Consumer Banking

Consumer Banking offers a diversified range of credit, banking and investment products and services to consumers and small businesses. *Consumer Banking* product offerings include traditional savings accounts, money market savings accounts, CDs and IRAs, checking accounts, and investment accounts and products, as well as credit and debit cards, residential mortgages and home equity loans, and direct and indirect loans to consumers and small businesses in the U.S. *Consumer Banking* includes the impact of servicing residential mortgages and home equity loans.

Global Wealth & Investment Management

GWIM provides a high-touch client experience through a network of financial advisors focused on clients with over $250,000 in total investable assets, including tailored solutions to meet clients' needs through a full set of investment management, brokerage, banking and retirement products. *GWIM* also provides comprehensive wealth management solutions targeted to high net worth and ultra high net worth clients, as well as customized solutions to meet clients' wealth structuring, investment management, trust and banking needs, including specialty asset management services.

Global Banking

Global Banking provides a wide range of lending-related products and services, integrated working capital management and treasury solutions, and underwriting and advisory services through the Corporation's network of offices and client relationship teams. *Global Banking* also provides investment banking products to clients. The economics of certain investment banking and underwriting activities are shared primarily between *Global Banking* and *Global Markets* under an internal revenue-sharing arrangement. *Global Banking* clients generally include middle-market companies, commercial real estate firms, not-for-profit companies, large global corporations, financial institutions, leasing clients, and mid-sized U.S.-based businesses requiring customized and integrated financial advice and solutions.

Global Markets

Global Markets offers sales and trading services and research services to institutional clients across fixed-income, credit, currency, commodity and equity businesses. *Global Markets* provides market-making, financing, securities clearing, settlement and custody services globally to institutional investor clients in support of their investing and trading activities. *Global Markets* product coverage includes securities and derivative products in both the primary and secondary markets. *Global Markets* also works with commercial and corporate clients to provide risk management products. As a result of market-making activities, *Global Markets* may be required to manage risk in a broad range of financial products. In addition, the economics of certain investment banking and underwriting activities are shared primarily between *Global Markets* and *Global Banking* under an internal revenue-sharing arrangement.

All Other

All Other primarily consists of ALM activities, liquidating businesses and certain expenses not otherwise allocated to a business segment. ALM activities encompass interest rate and foreign currency risk management activities for which substantially all of the results are allocated to the business segments.

Basis of Presentation

The management accounting and reporting process derives segment and business results by utilizing allocation methodologies for revenue and expense. The net income derived for the businesses is dependent upon revenue and cost allocations using an activity-based costing model, funds transfer pricing, and other methodologies and assumptions management believes are appropriate to reflect the results of the business.

Total revenue, net of interest expense, includes net interest income on an FTE basis and noninterest income. The adjustment of net interest income to an FTE basis results in a corresponding increase in income tax expense. The segment results also reflect certain revenue and expense methodologies that are utilized to determine net income. The net interest income of the businesses includes the results of a funds transfer pricing process that matches assets and liabilities with similar interest rate sensitivity and maturity characteristics. In segments where the total of liabilities and equity exceeds assets, which are generally deposit-taking segments, the Corporation allocates assets to match liabilities. Net interest income of the business segments also includes an allocation of net interest income generated by certain of the Corporation's ALM activities.

The Corporation's ALM activities include an overall interest rate risk management strategy that incorporates the use of various derivatives and cash instruments to manage fluctuations in earnings and capital that are caused by interest rate volatility. The Corporation's goal is to manage interest rate sensitivity so that movements in interest rates do not significantly adversely affect earnings and capital. The results of

substantially all of the Corporation's ALM activities are allocated to the business segments and fluctuate based on the performance of the ALM activities. ALM activities include external product pricing decisions including deposit pricing strategies, the effects of the Corporation's internal funds transfer pricing process and the net effects of other ALM activities.

Certain expenses not directly attributable to a specific business segment are allocated to the segments. The costs of certain centralized or shared functions are allocated based on methodologies that reflect utilization.

Effective October 1, 2021, a business activity previously included in the *Global Markets* segment is being reported as a liquidating business in *All Other*, consistent with a realignment in performance reporting to senior management. While this activity was not material to *Global Markets'* results of operations and historical results have not been restated, this activity's noninterest expense of $309 million and $473 million for the three months ended September 30, 2021 and June 30, 2021 was elevated and would have been excluded from *Global Markets'* results of operations for those periods under the new basis of presentation.

The table below presents net income (loss) and the components thereto (with net interest income on an FTE basis for the business segments, *All Other* and the total Corporation) for 2021, 2020 and 2019, and total assets at December 31, 2021 and 2020 for each business segment, as well as *All Other.*

Results of Business Segments and All Other

At and for the year ended December 31	Total Corporation [1]			Consumer Banking		
(Dollars in millions)	**2021**	2020	2019	**2021**	2020	2019
Net interest income	**$ 43,361**	$ 43,859	$ 49,486	**$ 24,929**	$ 24,698	$ 28,158
Noninterest income	**46,179**	42,168	42,353	**9,076**	8,564	10,429
Total revenue, net of interest expense	**89,540**	86,027	91,839	**34,005**	33,262	38,587
Provision for credit losses	**(4,594)**	11,320	3,590	**(1,035)**	5,765	3,772
Noninterest expense	**59,731**	55,213	54,900	**19,290**	18,882	17,646
Income before income taxes	**34,403**	19,494	33,349	**15,750**	8,615	17,169
Income tax expense	**2,425**	1,600	5,919	**3,859**	2,111	4,207
Net income	**$ 31,978**	$ 17,894	$ 27,430	**$ 11,891**	$ 6,504	$ 12,962
Period-end total assets	**$ 3,169,495**	$ 2,819,627		**$ 1,131,142**	$ 988,580	

	Global Wealth & Investment Management			Global Banking		
	2021	2020	2019	**2021**	2020	2019
Net interest income	**$ 5,664**	$ 5,468	$ 6,504	**$ 8,511**	$ 9,013	$ 10,675
Noninterest income	**15,084**	13,116	13,034	**12,364**	9,974	9,808
Total revenue, net of interest expense	**20,748**	18,584	19,538	**20,875**	18,987	20,483
Provision for credit losses	**(241)**	357	82	**(3,201)**	4,897	414
Noninterest expense	**15,258**	14,160	13,825	**10,632**	9,342	9,011
Income before income taxes	**5,731**	4,067	5,631	**13,444**	4,748	11,058
Income tax expense	**1,404**	996	1,380	**3,630**	1,282	2,985
Net income	**$ 4,327**	$ 3,071	$ 4,251	**$ 9,814**	$ 3,466	$ 8,073
Period-end total assets	**$ 438,275**	$ 369,736		**$ 638,131**	$ 580,561	

	Global Markets			All Other		
	2021	2020	2019	**2021**	2020	2019
Net interest income	**$ 4,011**	$ 4,646	$ 3,915	**$ 246**	$ 34	$ 234
Noninterest income	**15,244**	14,119	11,699	**(5,589)**	(3,605)	(2,617)
Total revenue, net of interest expense	**19,255**	18,765	15,614	**(5,343)**	(3,571)	(2,383)
Provision for credit losses	**65**	251	(9)	**(182)**	50	(669)
Noninterest expense	**13,032**	11,417	10,728	**1,519**	1,412	3,690
Income (loss) before income taxes	**6,158**	7,097	4,895	**(6,680)**	(5,033)	(5,404)
Income tax expense (benefit)	**1,601**	1,845	1,395	**(8,069)**	(4,634)	(4,048)
Net income (loss)	**$ 4,557**	$ 5,252	$ 3,500	**$ 1,389**	$ (399)	$ (1,356)
Period-end total assets	**$ 747,794**	$ 616,609		**$ 214,153**	$ 264,141	

(1) There were no material intersegment revenues

The tables below present noninterest income and the associated components for 2021, 2020 and 2019 for each business segment, *All Other* and the total Corporation. For more information, see *Note 2 – Net Interest Income and Noninterest Income.*

Noninterest Income by Business Segment and All Other

	Total Corporation			Consumer Banking			Global Wealth & Investment Management		
(Dollars in millions)	**2021**	2020	2019	**2021**	2020	2019	**2021**	2020	2019
Fees and commissions:									
Card income									
Interchange fees	**$ 4,560**	$ 3,954	$ 3,834	**$ 3,597**	$ 3,027	$ 3,174	**$ 43**	$ 36	$ 59
Other card income	**1,658**	**1,702**	1,963	**1,575**	1,646	1,910	**42**	42	42
Total card income	**6,218**	5,656	5,797	**5,172**	4,673	5,084	**85**	78	101
Service charges									
Deposit-related fees	**6,271**	5,991	6,588	**3,538**	3,417	4,218	**72**	67	68
Lending-related fees	**1,233**	**1,150**	1,086	**—**	—	—	**—**	—	—
Total service charges	**7,504**	7,141	7,674	**3,538**	3,417	4,218	**72**	67	68
Investment and brokerage services									
Asset management fees	**12,729**	10,708	10,241	**188**	146	144	**12,541**	10,578	10,130
Brokerage fees	**3,961**	3,866	3,661	**132**	127	149	**1,771**	1,692	1,740
Total investment and brokerage services	**16,690**	14,574	13,902	**320**	273	293	**14,312**	12,270	11,870
Investment banking fees									
Underwriting income	**5,077**	4,698	2,998	**—**	—	—	**388**	391	401
Syndication fees	**1,499**	861	1,184	**—**	—	—	**—**	—	—
Financial advisory services	**2,311**	1,621	1,460	**—**	—	—	**—**	—	—
Total investment banking fees	**8,887**	7,180	5,642	**—**	—	—	**388**	391	401
Total fees and commissions	**39,299**	34,551	33,015	**9,030**	8,363	9,595	**14,857**	12,806	12,440
Market making and similar activities	**8,691**	8,355	9,034	**1**	2	6	**40**	63	113
Other income (loss)	**(1,811)**	(738)	304	**45**	199	828	**187**	247	481
Total noninterest income	**$ 46,179**	$ 42,168	$ 42,353	**$ 9,076**	$ 8,564	$ 10,429	**$ 15,084**	$ 13,116	$ 13,034

	Global Banking			Global Markets			All Other [(1)]		
	2021	2020	2019	**2021**	2020	2019	**2021**	2020	2019
Fees and commissions:									
Card income									
Interchange fees	**$ 700**	$ 499	$ 519	**$ 220**	$ 391	$ 81	**$ —**	$ 1	$ 1
Other card income	**13**	14	13	**—**	—	(1)	**28**	—	(1)
Total card income	**713**	513	532	**220**	391	80	**28**	1	—
Service charges									
Deposit-related fees	**2,508**	2,298	2,121	**146**	177	156	**7**	32	25
Lending-related fees	**1,015**	940	894	**218**	210	192	**—**	—	—
Total service charges	**3,523**	3,238	3,015	**364**	387	348	**7**	32	25
Investment and brokerage services									
Asset management fees	**—**	—	—	**—**	—	—	**—**	(16)	(33)
Brokerage fees	**104**	74	34	**1,979**	1,973	1,738	**(25)**	—	—
Total investment and brokerage services	**104**	74	34	**1,979**	1,973	1,738	**(25)**	(16)	(33)
Investment banking fees									
Underwriting income	**2,187**	2,070	1,227	**2,725**	2,449	1,555	**(223)**	(212)	(185)
Syndication fees	**781**	482	574	**718**	379	610	**—**	—	—
Financial advisory services	**2,139**	1,458	1,336	**173**	163	123	**(1)**	—	1
Total investment banking fees	**5,107**	4,010	3,137	**3,616**	2,991	2,288	**(224)**	(212)	(184)
Total fees and commissions	**9,447**	7,835	6,718	**6,179**	5,742	4,454	**(214)**	(195)	(192)
Market making and similar activities	**145**	103	235	**8,760**	8,471	7,065	**(255)**	(284)	1,615
Other income (loss)	**2,772**	2,036	2,855	**305**	(94)	180	**(5,120)**	(3,126)	(4,040)
Total noninterest income	**$ 12,364**	$ 9,974	$ 9,808	**$ 15,244**	$ 14,119	$ 11,699	**$ (5,589)**	$ (3,605)	$ (2,617)

(1) *All Other* includes eliminations of intercompany transactions.

Business Segment Reconciliations

(Dollars in millions)	2021	2020	2019
Segments' total revenue, net of interest expense	$ 94,883	$ 89,598	$ 94,222
Adjustments [1]:			
Asset and liability management activities	(4)	375	241
Liquidating businesses, eliminations and other	(5,339)	(3,946)	(2,624)
FTE basis adjustment	(427)	(499)	(595)
Consolidated revenue, net of interest expense	$ 89,113	$ 85,528	$ 91,244
Segments' total net income	30,589	18,293	28,786
Adjustments, net-of-tax [1]:			
Asset and liability management activities	11	279	202
Liquidating businesses, eliminations and other	1,378	(678)	(1,558)
Consolidated net income	$ 31,978	$ 17,894	$ 27,430

	December 31	
	2021	2020
Segments' total assets	$ 2,955,342	$ 2,555,486
Adjustments [1]:		
Asset and liability management activities, including securities portfolio	1,363,626	1,176,071
Elimination of segment asset allocations to match liabilities	(1,216,891)	(977,685)
Other	67,418	65,755
Consolidated total assets	$ 3,169,495	$ 2,819,627

[1] Adjustments include consolidated income, expense and asset amounts not specifically allocated to individual business segments.

NOTE 24 Parent Company Information

The following tables present the Parent Company-only financial information.

Condensed Statement of Income

(Dollars in millions)	2021	2020	2019
Income			
Dividends from subsidiaries:			
Bank holding companies and related subsidiaries	$ 15,621	$ 10,352	$ 27,820
Interest from subsidiaries	8,362	8,825	9,502
Other income (loss)	(114)	(138)	74
Total income	23,869	19,039	37,396
Expense			
Interest on borrowed funds from subsidiaries	54	136	451
Other interest expense	3,383	4,119	5,899
Noninterest expense	1,531	1,651	1,641
Total expense	4,968	5,906	7,991
Income before income taxes and equity in undistributed earnings of subsidiaries	18,901	13,133	29,405
Income tax expense	886	649	341
Income before equity in undistributed earnings of subsidiaries	18,015	12,484	29,064
Equity in undistributed earnings (losses) of subsidiaries:			
Bank holding companies and related subsidiaries	14,078	5,372	(1,717)
Nonbank companies and related subsidiaries	(115)	38	83
Total equity in undistributed earnings (losses) of subsidiaries	13,963	5,410	(1,634)
Net income	$ 31,978	$ 17,894	$ 27,430

Condensed Balance Sheet

(Dollars in millions)	December 31 2021	2020
Assets		
Cash held at bank subsidiaries	**$ 5,011**	$ 5,893
Securities	**671**	701
Receivables from subsidiaries:		
Bank holding companies and related subsidiaries	**217,447**	206,566
Banks and related subsidiaries	**347**	213
Nonbank companies and related subsidiaries	**368**	410
Investments in subsidiaries:		
Bank holding companies and related subsidiaries	**316,497**	305,818
Nonbank companies and related subsidiaries	**3,645**	3,715
Other assets	**8,602**	9,850
Total assets	**$ 552,588**	$ 533,166
Liabilities and shareholders' equity		
Accrued expenses and other liabilities	**$ 17,394**	$ 15,965
Payables to subsidiaries:		
Banks and related subsidiaries	**107**	129
Bank holding companies and related subsidiaries	**3**	—
Nonbank companies and related subsidiaries	**11,564**	11,067
Long-term debt	**253,454**	233,081
Total liabilities	**282,522**	260,242
Shareholders' equity	**270,066**	272,924
Total liabilities and shareholders' equity	**$ 552,588**	$ 533,166

Condensed Statement of Cash Flows

(Dollars in millions)	2021	2020	2019
Operating activities			
Net income	**$ 31,978**	$ 17,894	$ 27,430
Reconciliation of net income (loss) to net cash provided by (used in) operating activities:			
Equity in undistributed (earnings) losses of subsidiaries	**(13,963)**	(5,410)	1,634
Other operating activities, net	**(7,144)**	14,303	16,973
Net cash provided by operating activities	**10,871**	26,787	46,037
Investing activities			
Net purchases of securities	**(14)**	(4)	(17)
Net payments to subsidiaries	**(10,796)**	(33,111)	(19,121)
Other investing activities, net	**(26)**	(7)	7
Net cash used in investing activities	**(10,836)**	(33,122)	(19,131)
Financing activities			
Net increase (decrease) in other advances	**503**	(422)	(1,625)
Proceeds from issuance of long-term debt	**56,106**	43,766	29,315
Retirement of long-term debt	**(24,544)**	(23,168)	(21,039)
Proceeds from issuance of preferred stock and warrants	**2,170**	2,181	3,643
Redemption of preferred stock	**(1,971)**	(1,072)	(2,568)
Common stock repurchased	**(25,126)**	(7,025)	(28,144)
Cash dividends paid	**(8,055)**	(7,727)	(5,934)
Net cash provided by (used in) financing activities	**(917)**	6,533	(26,352)
Net increase (decrease) in cash held at bank subsidiaries	**(882)**	198	554
Cash held at bank subsidiaries at January 1	**5,893**	5,695	5,141
Cash held at bank subsidiaries at December 31	**$ 5,011**	$ 5,893	$ 5,695

NOTE 25 Performance by Geographical Area

The Corporation's operations are highly integrated with operations in both U.S. and non-U.S. markets. The non-U.S. business activities are largely conducted in Europe, the Middle East and Africa and in Asia. The Corporation identifies its geographic performance based on the business unit structure used to manage the capital or expense deployed in the region as applicable. This requires certain judgments related to the allocation of revenue so that revenue can be appropriately matched with the related capital or expense deployed in the region. Certain asset, liability, income and expense amounts have been allocated to arrive at total assets, total revenue, net of interest expense, income before income taxes and net income by geographic area as presented below.

(Dollars in millions)		Total Assets at Year End [1]	Total Revenue, Net of Interest Expense [2]	Income Before Income Taxes	Net Income
U.S. [3]	**2021**	**$ 2,789,862**	**$ 78,012**	**$ 31,392**	**$ 27,781**
	2020	2,490,247	75,576	18,247	16,692
	2019		81,236	30,699	25,937
Asia	**2021**	**117,085**	**4,439**	**988**	**733**
	2020	99,283	4,232	1,051	788
	2019		3,491	765	570
Europe, Middle East and Africa	**2021**	**233,356**	**5,423**	**1,097**	**3,134**
	2020	202,701	4,491	(596)	264
	2019		5,310	921	672
Latin America and the Caribbean	**2021**	**29,192**	**1,239**	**499**	**330**
	2020	27,396	1,229	293	150
	2019		1,207	369	251
Total Non-U.S.	**2021**	**379,633**	**11,101**	**2,584**	**4,197**
	2020	329,380	9,952	748	1,202
	2019		10,008	2,055	1,493
Total Consolidated	**2021**	**$ 3,169,495**	**$ 89,113**	**$ 33,976**	**$ 31,978**
	2020	2,819,627	85,528	18,995	17,894
	2019		91,244	32,754	27,430

(1) Total assets include long-lived assets, which are primarily located in the U.S.
(2) There were no material intercompany revenues between geographic regions for any of the periods presented.
(3) Substantially reflects the U.S.

Glossary

Alt-A Mortgage – A type of U.S. mortgage that is considered riskier than A-paper, or "prime," and less risky than "subprime," the riskiest category. Typically, Alt-A mortgages are characterized by borrowers with less than full documentation, lower credit scores and higher LTVs.

Assets Under Management (AUM) – The total market value of assets under the investment advisory and/or discretion of *GWIM* which generate asset management fees based on a percentage of the assets' market values. AUM reflects assets that are generally managed for institutional, high net worth and retail clients, and are distributed through various investment products including mutual funds, other commingled vehicles and separate accounts.

Banking Book – All on- and off-balance sheet financial instruments of the Corporation except for those positions that are held for trading purposes.

Brokerage and Other Assets – Non-discretionary client assets which are held in brokerage accounts or held for safekeeping.

Committed Credit Exposure – Any funded portion of a facility plus the unfunded portion of a facility on which the lender is legally bound to advance funds during a specified period under prescribed conditions.

Credit Derivatives – Contractual agreements that provide protection against a specified credit event on one or more referenced obligations.

Credit Valuation Adjustment (CVA) – A portfolio adjustment required to properly reflect the counterparty credit risk exposure as part of the fair value of derivative instruments.

Debit Valuation Adjustment (DVA) – A portfolio adjustment required to properly reflect the Corporation's own credit risk exposure as part of the fair value of derivative instruments and/or structured liabilities.

Funding Valuation Adjustment (FVA) – A portfolio adjustment required to include funding costs on uncollateralized derivatives and derivatives where the Corporation is not permitted to use the collateral it receives.

Interest Rate Lock Commitment (IRLC) – Commitment with a loan applicant in which the loan terms are guaranteed for a designated period of time subject to credit approval.

Letter of Credit – A document issued on behalf of a customer to a third party promising to pay the third party upon presentation of specified documents. A letter of credit effectively substitutes the issuer's credit for that of the customer.

Loan-to-value (LTV) – A commonly used credit quality metric. LTV is calculated as the outstanding carrying value of the loan divided by the estimated value of the property securing the loan.

Margin Receivable – An extension of credit secured by eligible securities in certain brokerage accounts.

Matched Book – Repurchase and resale agreements or securities borrowed and loaned transactions where the overall asset and liability position is similar in size and/or maturity. Generally, these are entered into to accommodate customers where the Corporation earns the interest rate spread.

Mortgage Servicing Rights (MSR) – The right to service a mortgage loan when the underlying loan is sold or securitized. Servicing includes collections for principal, interest and escrow payments from borrowers and accounting for and remitting principal and interest payments to investors.

Nonperforming Loans and Leases – Includes loans and leases that have been placed on nonaccrual status, including nonaccruing loans whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties.

Prompt Corrective Action (PCA) – A framework established by the U.S. banking regulators requiring banks to maintain certain levels of regulatory capital ratios, comprised of five categories of capitalization: "well capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized" and "critically undercapitalized." Insured depository institutions that fail to meet certain of these capital levels are subject to increasingly strict limits on their activities, including their ability to make capital distributions, pay management compensation, grow assets and take other actions.

Subprime Loans – Although a standard industry definition for subprime loans (including subprime mortgage loans) does not exist, the Corporation defines subprime loans as specific product offerings for higher risk borrowers.

Troubled Debt Restructurings (TDRs) – Loans whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties. Certain consumer loans for which a binding offer to restructure has been extended are also classified as TDRs.

Value-at-Risk (VaR) – VaR is a model that simulates the value of a portfolio under a range of hypothetical scenarios in order to generate a distribution of potential gains and losses. VaR represents the loss the portfolio is expected to experience with a given confidence level based on historical data. A VaR model is an effective tool in estimating ranges of potential gains and losses on our trading portfolios.

Key Metrics

Active Digital Banking Users – Mobile and/or online active users over the past 90 days.

Active Mobile Banking Users – Mobile active users over the past 90 days.

Book Value – Ending common shareholders' equity divided by ending common shares outstanding.

Deposit Spread – Annualized net interest income divided by average deposits.

Dividend Payout Ratio – Common dividends declared divided by net income applicable to common shareholders.

Efficiency Ratio – Noninterest expense divided by total revenue, net of interest expense.

Gross Interest Yield – Effective annual percentage rate divided by average loans.

Net Interest Yield – Net interest income divided by average total interest-earning assets.

Operating Margin – Income before income taxes divided by total revenue, net of interest expense.

Return on Average Allocated Capital – Adjusted net income divided by allocated capital.

Return on Average Assets – Net income divided by total average assets.

Return on Average Common Shareholders' Equity – Net income applicable to common shareholders divided by average common shareholders' equity.

Return on Average Shareholders' Equity – Net income divided by average shareholders' equity.

Risk-adjusted Margin – Difference between total revenue, net of interest expense, and net credit losses divided by average loans.

Acronyms

ABS	Asset-backed securities
AFS	Available-for-sale
AI	Artificial intelligence
ALM	Asset and liability management
ARR	Alternative reference rates
AUM	Assets under management
AVM	Automated valuation model
BANA	Bank of America, National Association
BHC	Bank holding company
BofAS	BofA Securities, Inc.
BofASE	BofA Securities Europe SA
bps	Basis points
CAE	Chief Audit Executive
CAO	Chief Administrative Officer
CCAR	Comprehensive Capital Analysis and Review
CDO	Collateralized debt obligation
CDS	Credit default swap
CECL	Current expected credit losses
CET1	Common equity tier 1
CFPB	Consumer Financial Protection Bureau
CFTC	Commodity Futures Trading Commission
CLO	Collateralized loan obligation
CLTV	Combined loan-to-value
CRO	Chief Risk Officer
CVA	Credit valuation adjustment
DIF	Deposit Insurance Fund
DVA	Debit valuation adjustment
ECL	Expected credit losses
EMRC	Enterprise Model Risk Committee
EPS	Earnings per common share
ERC	Enterprise Risk Committee
ESG	Environmental, social and governance
EU	European Union
FCA	Financial Conduct Authority
FDIC	Federal Deposit Insurance Corporation
FDICIA	Federal Deposit Insurance Corporation Improvement Act of 1991
FHA	Federal Housing Administration
FHLB	Federal Home Loan Bank
FHLMC	Freddie Mac
FICC	Fixed income, currencies and commodities
FICO	Fair Isaac Corporation (credit score)
FLUs	Front line units
FNMA	Fannie Mae
FTE	Fully taxable-equivalent
FVA	Funding valuation adjustment
GAAP	Accounting principles generally accepted in the United States of America
GDPR	General Data Protection Regulation
GLS	Global Liquidity Sources
GNMA	Government National Mortgage Association
GRM	Global Risk Management
GSE	Government-sponsored enterprise
G-SIB	Global systemically important bank
GWIM	Global Wealth & Investment Management
HELOC	Home equity line of credit
HQLA	High Quality Liquid Assets
HTM	Held-to-maturity
IBOR	Interbank Offered Rates
ICAAP	Internal Capital Adequacy Assessment Process
IRLC	Interest rate lock commitment
ISDA	International Swaps and Derivatives Association, Inc.
LCR	Liquidity Coverage Ratio
LHFS	Loans held-for-sale
LIBOR	London Interbank Offered Rate
LTV	Loan-to-value
MBS	Mortgage-backed securities
MD&A	Management's Discussion and Analysis of Financial Condition and Results of Operations
MLI	Merrill Lynch International
MLPCC	Merrill Lynch Professional Clearing Corp
MLPF&S	Merrill Lynch, Pierce, Fenner & Smith Incorporated
MRC	Management Risk Committee
MSA	Metropolitan Statistical Area
MSR	Mortgage servicing right
MWM	Merrill Wealth Management
NOL	Net operating loss
NSFR	Net Stable Funding Ratio
OCC	Office of the Comptroller of the Currency
OCI	Other comprehensive income
OREO	Other real estate owned
OTC	Over-the-counter
PCA	Prompt Corrective Action
PPP	Paycheck Protection Program
RMBS	Residential mortgage-backed securities
RSU	Restricted stock unit
RWA	Risk-weighted assets
SBA	Small Business Administration
SBLC	Standby letter of credit
SCB	Stress capital buffer
SEC	Securities and Exchange Commission
SLR	Supplementary leverage ratio
SOFR	Secured Overnight Financing Rate
TDR	Troubled debt restructurings
TLAC	Total loss-absorbing capacity
UDAAP	Unfair, deceptive, or abusive acts or practices
VA	U.S. Department of Veterans Affairs
VaR	Value-at-Risk
VIE	Variable interest entity

Disclosure Controls and Procedures

Bank of America Corporation and Subsidiaries

As of the end of the period covered by this report and pursuant to Rule 13a-15 of the Securities Exchange Act of 1934, as amended (Exchange Act), Bank of America's management, including the Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness and design of our disclosure controls and procedures (as that term is defined in Rule 13a-15(e) of the Exchange Act). Based upon that evaluation, Bank of America's Chief Executive Officer and Chief Financial Officer concluded that Bank of America's disclosure controls and procedures were effective, as of the end of the period covered by this report.

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Executive Management Team and Management Committee

Bank of America Corporation

Executive Management Team

Brian T. Moynihan*
Chair of the Board and
Chief Executive Officer

Raul A. Anaya
President, Business Banking

Dean C. Athanasia*
President, Regional Banking

Catherine P. Bessant
Vice Chair, Global Strategy

Aditya Bhasin*
Chief Technology and Information Officer

D. Steve Boland*
Chief Administrative Officer

Alastair M. Borthwick*
Chief Financial Officer

Sheri B. Bronstein*
Chief Human Resources Officer

James P. DeMare*
President, Global Markets

Paul M. Donofrio*
Vice Chair

Geoffrey S. Greener*
Chief Risk Officer

Christine P. Katziff
Chief Audit Executive

Kathleen A. Knox*
President, The Private Bank

Matthew M. Koder*
President, Global Corporate & Investment Banking

David G. Leitch
Vice Chair

Aron D. Levine
President, Preferred Banking

Bernard A. Mensah*
President, International; CEO, Merrill Lynch International

Lauren Mogensen*
Global General Counsel

Thong M. Nguyen*
Vice Chair, Head of Global Strategy & Enterprise Platforms

Holly O'Neill
President, Retail Banking

Tom M. Scrivener*
Chief Operations Executive

Andrew M. Sieg*
President, Merrill Wealth Management

Wendy H. Stewart
President, Global Commercial Banking

Bruce R. Thompson*
Vice Chair, Head of Enterprise Credit

Management Committee**

Faiz A. Ahmad
Head of Global Transaction Services

Michael C. Ankrom
Chief Resiliency Officer

Keith T. Banks
Vice Chair, Pension and Benefits Plan Chief Investment Officer

Alexandre Bettamio
President, LATAM

Rudolf A. Bless
Chief Accounting Officer

Len Botkin
Enterprise Initiatives and Responses, Business Continuity Executive

Cynthia H. Bowman
Chief Diversity & Inclusion and Talent Acquisition Officer

Candace Browning Platt
Head of Global Research

Lisa G. Clyde
Head of Global Corporate Banking & Leasing

Lawrence T. Di Rita
Head of Public Policy

Christopher J. Fabro
Global Compensation, Benefits and Corporate Aviation

Karen Fang
Global Head of Sustainable Finance

Craig Froelich
Chief Information Security Officer

Sarang R. Gadkari
Co-Head of Global Capital Markets

Debbie U. Helvig
Head of Corporate Communications

Shannon Lilly
Treasurer

Amy Littman
Head of Global Compliance, Operational Risk and Reputational Risk

Andrei Magasiner
Global Markets Chief of Staff

Denis Manelski
Global Head of FICC Sales

Anil T. Matai
Global Human Resources Executive and Life Event Services

E. Lee McEntire
Head of Investor Relations and Local Markets Organization

Sharon L. Miller
President, Small Business and Head of Specialty Banking & Lending

Mark Monaco
Head of Enterprise Payments

Tram V. Nguyen
Global Corporate Strategy Executive

Jessica A. Oppenheim
External Communications Executive

Lorna R. Sabbia
Head of Retirement and Personal Wealth Solutions

Purna R. Saggurti
Vice Chair, Bank of America

April Schneider
Global Capital Planning, Real Estate, Strategic Initiatives, Vendor & Procurement Executive

* Executive Officer

** All members of the Executive Management Team are also members of the Management Committee

Board of Directors
Bank of America Corporation

Jiro Seguchi
Co-President of APAC and Head of APAC GCIB

Thomas J. Sheehan
Head of Global Investment Banking

Jin Su
Co-President of APAC and Co-Head of APAC FICC

David C. Tyrie
Chief Digital Officer and Head of Global Marketing

Elif Bilgi Zapparoli
Co-Head of Global Capital Markets

Soofian J. Zuberi
Head of Global Equities

Board of Directors

Brian T. Moynihan
Chair of the Board and Chief Executive Officer, Bank of America Corporation

Lionel L. Nowell III
Lead Independent Director, Bank of America Corporation; Former Senior Vice President and Treasurer, PepsiCo, Inc.

Sharon L. Allen
Former Chairman, Deloitte LLP

Susan S. Bies*
Former Member, Federal Reserve Board of Governors

Frank P. Bramble, Sr.
Former Executive Vice Chairman, MBNA Corporation

Pierre J. P. de Weck
Former Chairman and Global Head of Private Wealth Management, Deutsche Bank AG

Arnold W. Donald
President and Chief Executive Officer, Carnival Corporation and Carnival plc

Linda P. Hudson
Former Chairman and Chief Executive Officer, The Cardea Group, LLC; Former President and Chief Executive Officer, BAE Systems, Inc.

Monica C. Lozano
Chief Executive Officer, College Futures Foundation; Former Chairman, US Hispanic Media Inc.

Thomas J. May*
Former Chairman, President, and Chief Executive Officer, Eversource Energy

Denise L. Ramos
Former Chief Executive Officer and President, ITT Inc.

Clayton S. Rose
President, Bowdoin College

Michael D. White
Former Chairman, President, and Chief Executive Officer, DIRECTV; Lead Director, Kimberly-Clark Corporation

Thomas D. Woods
Former Vice Chairman and Senior Executive Vice President of CIBC

R. David Yost
Former Chief Executive Officer, AmerisourceBergen Corporation

Maria T. Zuber
Vice President for Research and E.A. Griswold Professor of Geophysics, MIT

*Not standing for reelection at the 2022 Annual Meeting of Shareholders

Corporate Information

Bank of America Corporation

Headquarters

The principal executive offices of Bank of America Corporation (the Corporation) are located in the Bank of America Corporate Center, 100 North Tryon Street, Charlotte, NC 28255.

Stock Listing

The Corporation's common stock is listed on the New York Stock Exchange (NYSE) under the symbol BAC. The stock is typically listed as BankAm in newspapers. As of December 31, 2021, there were 149,586 registered holders of the Corporation's common stock.

Investor Relations

Analysts, portfolio managers and other investors seeking additional information about Bank of America stock should contact our Equity Investor Relations group at 1.704.386.5681 or i_r@bofa.com. For additional information about Bank of America from a credit perspective, including debt and preferred securities, contact our Fixed Income Investor Relations group at 1.866.607.1234 or fixedincomeir@bofa.com. Visit the Investor Relations area of the Bank of America website, https://investor.bankofamerica.com, for stock and dividend information, financial news releases, links to Bank of America SEC filings, electronic versions of our annual reports and other items of interest to the Corporation's shareholders.

Customers

For assistance with Bank of America products and services, call 1.800.432.1000, or visit the Bank of America website at www.bankofamerica.com. Additional toll-free numbers for specific products and services are listed on our website at www.bankofamerica.com/contact.

News Media

News media seeking information should visit our online newsroom at https://newsroom.bankofamerica.com for news releases, press kits and other items relating to the Corporation, including a complete list of the Corporation's media relations specialists grouped by business specialty or geography.

Annual Report on Form 10-K

The Corporation's 2021 Annual Report on Form 10-K is available at https://investor.bankofamerica.com. The Corporation also will provide a copy of the 2021 Annual Report on Form 10-K (without exhibits) upon written request addressed to:

Bank of America Corporation
Office of the Corporate Secretary
Bank of America Corporate Center
100 North Tryon Street
NC1-007-56-06
Charlotte, NC 28255

Shareholder Inquiries

For inquiries concerning dividend checks, electronic deposit of dividends, dividend reinvestment, tax statements, electronic delivery, transferring ownership, address changes or lost or stolen stock certificates, contact Bank of America Shareholder Services at Computershare Trust Company, N.A., via the Internet at www.computershare.com/bac; call 1.800.642.9855; or write to P.O. Box 505005, Louisville, KY 40233. For general shareholder information, contact Bank of America Office of the Corporate Secretary at 1.800.521.3984. Shareholders outside of the United States and Canada may call 1.781.575.2621. Hearing impaired 1.888.403.9700 or outside the United States 1.781.575.4592.

Electronic Delivery

As part of our ongoing commitment to reduce paper consumption, we offer electronic methods for customer communications and transactions. Customers can sign up to receive online statements through their Bank of America or Merrill Lynch Wealth Management account website. In 2012, we adopted the SEC's Notice and Access rule, which allows certain issuers to inform shareholders of the electronic availability of Proxy materials, including the Annual Report, which significantly reduced the number of printed copies we produce and mail to shareholders. Shareholders still receiving printed copies can join our efforts by electing to receive an electronic copy of the Annual Report and Proxy materials. If you have an account maintained in your name at Computershare Investor Services, you may sign up for this service at www.computershare.com/bac. If your shares are held by a broker, bank or other nominee, you may elect to receive an electronic copy of the Proxy materials online at www.proxyvote.com, or contact your broker.

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BANK OF AMERICA CORPORATION | 2021 ANNUAL REPORT